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Original Articles.

ON MOTOR PARALYSIS AND OTHER SYMPTOMS OF POISONING FROM MEDICINAL DOSES OF ARSENIC.[1]

BY JAMES J. PUTNAM, M. D.

THE figures for a portion of the Faradic reactions are as follows: —

Thenar em. right,	115 mm.
Thenar em. left,	105 mm.
Hypothenar em. right,	115 mm.
Hypothenar em. left,	105 mm.
Exten. com. dig.	90 mm.
Exten. carpi. rad.	100 mm.
Deltoid (contractions excessively feeble),	100 mm.
Biceps (contractions also excessively feeble).	100 to 120 mm.

The examination with the galvanic current gives for the deltoid and biceps K Cl.C. at 2.5 to 3 m. a., with the small electrode placed upon the motor point; for the exten. com. dig. about 4 m. a. (K Cl.C greater than An Cl.C). There is no reaction of degeneration anywhere.

To sum up, therefore, we have here a patient, past middle life, attacked with widespread muscular paresis, attended by moderate atrophy, affecting mainly the muscles which move the extremities on the trunk, but also, to some extent, those of the distal portions of the limbs; rapidly progressive for five months, then retrogressive; characterized by moderate diminution of electrical irritability to both currents, and by increased mechanical irritability; preceded and accompanied by severe rheumatoid pains about the joints, but without other marked disorders of the sensory system; and associated with symptoms of considerable and persistent drowsiness, and general depression of the nervous energy; and we find also the urine containing an unmistakeable trace of arsenic, which must have come, so far as is known, either from the wall-paper during October and November, or from the therapeutic doses of Fowler's solution which had been taken five months before.

It should also be stated that the patient has of late, during his recovery, been using for his asthma, a secret remedy, which has been found on analysis to contain arsenic, together with an iodine preparation probably hydriodic acid, and other substances, and that under this treatment he has done well. In estimating the importance of this fact, it should be remembered that we are now dealing, presumably, not with a case of arsenic poisoning, but with a neuritis which the arsenic left behind it, and that for neuritis, arsenic in the proper dose is of admitted value.

The danger of poisoning is only present when the dose is too large, or the elimination, including the metabolic processes by which the tissues react to the poison, is slow or imperfect.

At the present time the arsenic (the exact dose of which is unknown), is being passed off rapidly, as a recent examination of the urine has demonstrated. Possibly the presence in the mixture of potassic iodide and other diuretic substances, is hastening the elimination.

Fortunately, the favorable turn of the disease renders it now almost unnecessary for us, in deciding upon the diagnosis, to eliminate progressive muscular atrophy and the other myopathies of spinal origin; and the absence of sensory symptoms other than pain, practically excludes diffuse myelitis.

There remain, as possible diagnoses, acute multiple neuritis and acute primary myositis, different forms of which have been described by Wagner,[8] Henry Jackson,[9] and other observers to whom these writers refer. Acute myositis is a rare affection, and is usually rapidly fatal, or runs a progressive course. It is ushered in by rheumatoid pains, usually following exposure to cold and wet, or severe muscular strain. The attack is usually attended by fever, often by swelling of the muscles and œdema of the skin. The distribution of the symptoms varies, but it is more common in this disease than in neuritis, to see the larger muscles principally affected. Only a few cases of this clinical type, and ending in recovery, have been reported, and there is some doubt whether part of these were not cases of neuritis.

The case reported to-night seems to me to belong with this obscure class. The evidence in favor of the arsenical origin has been materially weakened, as stated above, by the discovery of arsenic in the wall-paper. Nevertheless, for the sake of calling attention to this possibility, I allow what I had written to stand unchanged.

The principal causes of neuritis, leaving out the traumatic forms, are exposure to cold and wet, certain infectious diseases, alcohol, lead, arsenic, and a few other poisons which need not be considered here. Finally, some cases are of unknown origin, and, very rarely, even in Northern climates, a case is met with that seems referable with some probability to specific infectious influences. Of these causes, the first four can be set aside as out of the question or improbable. The symptoms came on in the pleasant season of June and no exposure had preceded them. We cannot, however, positively exclude the causes of unknown character, nor specific infection. The question remains: What degree of probability is to be attached to the diagnosis of poisoning from arsenic?

The clinical picture presented by this case differs in several respects from the group of symptoms usually met with in arsenical poisoning from large single doses, but it should be remembered that we probably have to deal here, not with a typical, but with a modified or abortive form of the disease, such as occurs from the long-continued action of the poison taken in very small quantities. These forms vary widely, but they present similar features, such as neuralgic pains, drowsiness, loss of strength and energy, and sometimes serious paralyses.[10]

It has been pointed out above that the distribution of the muscular paralyses from arsenic poisoning is usually such that the muscles moving the hands and feet are the most affected, but, also, that it is not very uuusual to find the larger muscles of the trunk and limbs more or less weakened. The distribution met with in the present case, where the larger muscles are the ones most severely affected, is not noted as marking a special type of arsenical neuritis, but we find, at least, cases in which the larger muscles are involved equally with the smaller.[11] In certain cases of paralysis from

[1] Read before the Suffolk District Medical Society. Concluded from Vol. cxviii, page 649.

ERRATA. In the first part of this article, on page 647 of the previous number, for Popard, read Popow; for May 5th and 10th, read May 5th.

[8] Deutsches Arch. für Klin. Med., Vol. xl., 1887, p. 241.

[9] This Journal, 1887, p. 241.

See, also, a discussion on myositis and neuritis by Senator and others, before the Verein für Klin. Med.; Berl. Kl. Wschr., 1888.

[10] See the report of Prof. Wood to the Massachusetts State Board of Health, 1885 (Arsenic as a Domestic Poison).

[11] Comp. Gourbeyre; Gazette Méd. 1858. Obs. xxiv; Gerhardt: Sitzungsber. der Phys. Med. Gesellschaft zu Würzburg, 1882, p. 98: Jaeschke; Inaugural Dissertation, Breslau. Case 1.

lead-poisoning, the deltoids are very prone to suffer, and they may even be attacked before the other muscles, as in a case which I have recently had the opportunity of observing. Possibly a wider acquaintance with cases of arsenical paralysis will show us that similar differences in type are to be found also among them.

The very fact that such widely different agents as lead, arsenic, alcohol, sulphide of carbon, and the poison of the tubercular, and other bacteria, induce, on the whole, such similar types of neuritis, suggests that there is a common factor at work which is independent of the particular agent, and must consist in some peculiarity of the affected tissues. If this is so, then a variation in the symptoms which is often met with in one of these forms of poisoning, such as that from lead, will be likely to occur to a greater or less extent in the rest, when the conditions are favorable.

In a case of acute, fatal, infectious neuritis, which I have recently observed with Dr. M. A. Morris, of Charlestown, the left deltoid was the first muscle to be attacked with severe paralysis.

A second set of facts, pointing in the same direction has recently been brought forward by Chittenden, in a paper read before the Medico-Legal Society of New York on June 11, 1884,[12] where it was shown that lead, arsenic and similar poisons do not always accumulate in the same organ of the body, as the liver or the kidneys, but that the position of greater accumulation varies according to the rapidity of absorption (solubility) of the special preparation ingested, the rapidity of elimination, and similar factors. Thus, in some instances, the brain, or the muscles, and even special groups of muscles, contain a relatively large amount of the poison, and although, to be sure, it is mainly in cases of acute poisoning, where death occurred before the arsenic had had time to distribute itself evenly, that this irregularity of distribution occurs, yet the author admits (reprint, p. 26) that our information as to the cause of these facts is not yet sufficiently exact. These peculiarities in the local accumulation of the poisonous agent must certainly affect the symptoms, even if it be true that it is the degree of vulnerability of the special tissues, and not the amount of poison present, that chiefly determines whether or not paralysis will result.

As regards the bearing of the fact that paræsthesia and anæsthesia were wanting, in the case which I have reported, upon the diagnosis of neuritis from arsenical poisoning, it is to be borne in mind that this fact militates no more strongly against the diagnosis of neuritis from arsenic, than against the other forms of neuritis. It is certain, as a matter of clinical observation, that these symptoms are sometimes wanting in each one of the forms of toxic neuritis, notably those from lead, as well as in some cases of local neuritis. It is also certain that in such cases severe and persistent rheumatoid pains may be present in the neighborhood of the joints,[13] and it is equally true that the nutrition of the muscles may be seriously impaired, even in arsenical cases, without tenderness or marked or persistent numbness being present; as, for example, in a case reported by Jaeschke (l. c.).

Finally, the important question remains to be answered, whether it is possible that such serious symptoms as those described could be induced by such small quantities of arsenic as five drops of Fowler's solution taken three times daily for six weeks. Such a result as this is, doubtless, rare, but an examination of the cases given below will show that it is possible. When it does occur the question naturally arises whether an unusual susceptibility on the part of the patient, or an unusually slow elimination, leading to accumulation of the poison in the tissues, is the cause.

Most writers say that arsenic does not accumulate, but is rapidly eliminated. By this is, of course, meant that the accumulation does not go beyond a certain limit, for it is evident that a drug which is not wholly eliminated until from one to six weeks after being taken, as is the case with arsenic, must, for a certain time, have been absorbed faster than it could be eliminated.

Moreover, certain writers believe that arsenic really is stored up in the body. Rayer[14] quotes Bardeley to this effect, and Taylor cites Mr. Hunt, a writer on skin diseases, as holding the same view, but says that, in his own opinion, the facts adduced to show accumulation really show defective elimination, due to some particular cause, such as impaired action of the kidneys.

In the case under discussion to-night the kidneys seemed to be healthy, but the urine constantly contained a considerable amount of crystals of oxalate of lime, on repeated examinations during October and November. It is also to be remembered that the patient had been for a long time asthmatic, and was subject to chronic bronchitis, so that the process of oxidation may have been impaired.

It is also very important, in investigating the question of size of dose, to remember that it makes a vast difference in the result what preparation of arsenic has been taken, and that the common practice of expressing all doses in terms of the arsenious acid contained in them is clinically objectionable. Thus, as Devergie long ago pointed out[15] ten minims of Fowler's solution contains only one-tenth grains of arsenious acid, but is, in its poisoning action, equivalent to several times that quantity. The same writer expresses the opinion, though without stating his evidence, that the sodium arseniate, as found in Pear on's solution is relatively less active than the potassium arseniate of Fowler's solution. Devergie cites Boudin as having given up to 0.15 (two and one-half grains) of arsenious acid in intermittent fever; whereas, Fowler himself gave only from one to thirty minims (gr. one-third) of his solution and occasionally with more or less serious results.

Under the general heading of *unusual susceptibility*, the fact should be considered, that whereas most persons taking small and repeated doses of arsenic for a long time become habituated and indifferent to its presence, in others this indifference is not established, or else ceases after a time, so much so that there is a general feeling that it is unsafe to continue the use of arsenic as a medicine too long.

But have we any gauge of the length of time that it may be given with safety in a given case? So far as I know, there is none, and an examination of the cases cited below will show that the interval which may elapse before symptoms of chronic poisoning show themselves varies widely.

[13] Medico-Legal Journal.
[12] See Stillé, Materia Medica, Art. Arsenic.

[14] Dict. de Med. et de Chir. Prat.
[15] Bull. Gén. Therap., lxxii, p. 49.

The peasants of Steiermark learn, by gradual habituation, to take up to two or three, possibly four, grains a day, without the least inconvenience, a dose which is beyond the border line of danger, but it is stated by several writers that they become occasionally the victims of paralysis and other serious symptoms as a result of this habit.

I have recently seen a patient with rheumatic arthritis who has used $\frac{1}{30}$ gr. of arsenious acid three times daily, with regular intermissions, for a year or more without discomfort. This winter, she found that even a few doses caused abdominal pain and swelling of the eyelids.

Possibly, the occasional bad results may sometimes be due to a temporarily impaired secreting power on the part of the kidney, induced by the arsenic, which is known to cause, at times, albuminuria.

Taking the reports as we find them, we learn such facts as the following about the occasional effects of small and moderate doses:

(1) Gourberye[16] treated a female patient for a cutaneous affection with gtt. ij of Fowler's solution (presumably 3 t. d.) for fifteen days, but violent rheumatoid pains came on, which obliged her to keep her bed, and ceased when the medicine was suspended. The same thing happened again the following year, under the same circumstances.

(2) Huss[17] saw convulsions, pains in the back, and generalized muscular weakness and tremor, and formication follow the use of arsenious acid in dose of gr. $\frac{1}{14}$, 2 t. d.

(3) Gaillard[18] reports the case of a woman who was advised to take fifteen drops of Fowler's solution twice a day for two weeks; then three times a day for two weeks; then four times a day for the same period. The treatment was continued up to the fifth week, in spite of some unpleasant effects. Then a whole train of poisonous symptoms appeared, ending in paresis of all four extremities, which continued to grow worse for some weeks after the medicine had been given up. In the five weeks, she may have taken upwards of two ounces and a half.

(4) Dr. Turnstile,[19] of Bath, Eng., reports the case of a young woman who took ♏ iij of liquor arsenicalis for seven days, at the end of which time she became for a time seriously prostated. Also,

(5) A similar condition in a young man.

(6) In the *Canada Medical and Surgical Journal*, Montreal (1886–87, Vol. 15, p. 716), a case is reported where Fowler's solution, in doses of ♏ xx to xxx caused acute symptoms of poisoning, with paresis, ending in death. At the autopsy, signs of active multiple neuritis were found, with lesser changes in the spinal cord.

(7) Dr. Cummings[20] reports the case of a man who took gtt. iij to vi of Fowler's solution three times daily for two months; then a smaller dose for another month. This produced what was called "irritation of the lower extremities and symptoms of inflammation of the stomach."

(8) Dr. Jno. Barry[21] reports the case of a lady, who, while taking a course of arsenic (dose not given) under the observation of a London practitioner of great experience with the drug, was suddenly attacked with paralysis of both hands and feet. There is, however, some reason to think, to judge by the report, that an external use of arsenic may have played a part in the result.

(9) Dr. Hastings[22] reports the history of a patient who, after taking gtt. iij to v of Fowler's solution for some weeks, suffered from great weakness and partial paralysis of both arms and legs, with burning pains in the feet.

(10) Gibb[23] gives the history of a woman who for years had used arsenic as a medicine. She was finally attacked (November 18th) with severe neuralgic pains, successively in both groins, and the left hip, shoulder, and side, and a few months later with a numbness, and eventually complete paralysis of the legs, which are said, by the way, to have "felt quite numb, although sensibility (to objective tests?) was perfect."

The patient died on April 23d of the following year, and, on examination of the tissues, a trace of arsenic was found in the bones and liver. This is an important observation, because, if we may assume that she ceased taking arsenic at the time the severe neuralgic symptoms set in, we find that elimination was not complete at the end of six months.

(11) In the *Dublin Quarterly Journal*, Vol. 36, p. 474, the case is recorded of a man who took ♏ iij of Fowler's solution three times daily for ten or twelve months, at the end of which time symptoms of arsenic poisoning came on suddenly, terminating in death at the end of thirty-six hours. If Taylor's[24] opinion is to be taken, this would prove that a dose sufficient to cause poisoning must have been recently taken, but the history gives no hint that this occurred.

(12) Another instance of poisoning from medicinal doses is recorded by Dr. C. L. Dana in *Brain*, 1887, and forms one of his interesting cases of pseudo-tabes, with paralysis. The patient had been taking Fowler's solution in gradually increasing doses, and had finally reached f ʒss[25] (whether more than once daily is not stated), when the paralytic symptoms came on.

(13) Dr. Hooper[26] reports the following case, which is of special interest:

The patient, an adult male, took five drops of Fowler's solution three times daily, from the month of October until the 24th of June of the following year. At that time he came to Dr. Hooper for an ophthalmia, and by his advice the arsenic was immediately discontinued. Nevertheless, the following symptoms soon made their appearance: headache, drowsiness, nausea, excessive sense of weakness and prostration, rapid pulse, progressive paralysis, widespread muscular tremor, conjunctivitis with œdema, insomnia, irritation of the larynx and trachea, and increasing debility, ending finally in death on the 13th of September, three months after the cessation of the arsenical treatment.

(14) Dr. Jones[27] gives the case of a lady, who, for a cutaneous disease, was given gtt. v to xv of liquor arsenicalis, 3 t. d. After taking these doses for about a month, she was found presenting the symptoms of

[16] Loc. cit., p. 92.
[17] Alc. Chr., cited by Gourbeyre, Gaz. Med., 1858, Obs. xxviii.
[18] Soc. de méd. leg. de France, T. 3, 1874; cited by Gourbeyre, L'empoissem. ars., p. 39.
[19] Provincial Med. Jour., 1848.
[20] Dublin Quart. Jour., Vol. 18, p. 423.
[21] Dublin Med. Press, May 6, 1863; Dublin Quart. Jour., Vol. 35, p. 460.
[22] Provincial Med. Jour., August, 1848.
[23] Trans. of the Path. Soc. of London, Vol. 9, 1869, p. 442.
[24] Poisons, p. 294.
[25] Printed erroneously as oz. ss in the original; as Dr. Dana authorizes me to state.
[26] Cited by Taylor.
[27] Provincial Journal, November 18, 1843, p. 127; cited by Taylor.

intense gastro-intestinal irritation, scanty urine, serious trophic changes in the legs, associated with crampy sensations and "partial loss of motion and sensation."

If, instead of confining ourselves to the paralytic cases, we should ask how often general symptoms of poisoning result from small doses of arsenic, it would be an easy matter to extend this list.

Thus, to go no further than Taylor, a careful and apparently conservative writer, we find in his "Treatise on Poisons" (2d Am. ed., p. 339), the following cases cited:

(15) Dr. Burne. A young female took gr. $\frac{1}{60}$ of assenious acid [= about ♏ vi of Fowler's solution] daily for four days. She then suffered from inflammation of the stomach, delirium, palsied shaking of the head, and such a degree of debility and exhaustion as to place her in imminent danger.

(16) Taylor (p. 340). Gr. $\frac{1}{30}$, taken once or twice a day for seven days, apparently caused "sickness, irritation of the skin, and eczema over the whole body."

(17) Taylor (p. 395). An adult female took in three doses ♏ xxx of liquor arsenici chloridi (said to be a very poisonous preparation) in the course of twenty-four hours. The quantity of arsenic thus taken was not more than the tenth part of a grain, and yet the symptoms which followed were of a severe kind, resembling those of chronic poisoning. There was constriction of the throat, pain and irritation of the stomach and bowels, tingling and numbness of the hands and feet, loss of muscular power, and a feeling of extreme depression. The medicine was withdrawn, and the patient slowly recovered. Taylor gives the usual medicinal dose of this preparation as from three to ten minims.

Finally, I would suggest that some of the lighter symptoms of poisoning from arsenic in small doses may be overlooked or referred to other causes.

I have recently had in my own practice the following case: I ordered for an adult female, with Graves's disease, the following mixture:

R	Fowler's sol.	6.00
	Pyrophosphate of iron	5.00
	Elix. calisaya	500.00
M.		
Dose, two teaspoonfuls, t. i. d.		

Within, literally, a day or two after beginning to take it, the patient felt symptoms of severe gastro-intestinal irritation, from which she had never suffered before — great pain, nausea, vomiting, and for a time diarrhœa. The medicine was discontinued, but it was a month before she was able to retain solid food, and during the convalescence, as she expressed it, "the whole skin of her mouth came off."

These instances of serious poisoning from small doses of arsenic are, no doubt, very rare, as compared with the vast mass of cases where the drug has been given for long periods without harm. Still, probably more such cases exist than have been reported, and, at any rate, there are enough to show that the danger of poisoning from medicinal doses, though slight, yet is real, and I cannot but sympathize with the following sentiment, expressed by Jaeschke in his inaugural dissertation: "Arsenic is at once a dangerous and a treacherous poison. Let the limits of safety once be overstepped, and there is risk, not only that serious temporary results may follow, but also that, after these have passed away, painful and disabling affections may be left behind."

That it is an agent of the greatest value is also true, and we need to study its action with great care, in order to extract its good effects and avoid its dangers. To this end I think the following facts should be borne in mind:

(1) The temporary tolerance of a given dose of arsenic, whether large or small, is not a sufficient proof that it is being disposed of so that it will not cause symptoms of poisoning after an indeterminate time.

(2) It is not always enough to withdraw the medicine when the first symptoms of poisoning show themselves, partly because several weeks at least may still elapse before the remaining arsenic can be wholly eliminated, and partly because the symptoms are apt to go on increasing in severity without renewed ingestion.

When this paper was read, Dr. F. C. Shattuck reported in connection with it a very interesting case, which will be found described in the records of the meeting. The patient was a young married lady, and her symptoms consisted in rheumatoid pains in all four limbs, of long duration, and accompanied with some general debility, and with tenderness in the muscular masses and along some of the nerve-trunks. Arsenic had been found in the wall-paper, and an analysis just made by Professor Wood had shown the presence of a small quantity also in the urine. This case acquires a special interest from the fact that the lady is niece to my patient, and that both of them belong to a family in which marked ability and grave neuroses have been common. I had purposely avoided dwelling, in my paper, on the possible influence of a neuropathic constitution in predisposing to an organic nervous affection such as this, feeling that my diagnosis ought to be based on more definite clinical grounds. That such a predisposition may exist is, however, almost beyond a question, and I gladly take the opportunity offered by Dr. Shattuck's interesting communication, to call attention to the fact.

A CASE OF TUBERCULOSIS OF THE BLADDER, PROSTATE AND KIDNEYS, ORIGINATING IN TUBERCULOUS EPIDIDYMITIS.—AUTOPSY.[1]

BY F. S. WATSON, M.D.

THE specimens I show here to-night come from a patient aged thirty-five years, who died to-day, and who has been under my observation for the past fourteen months.

I offer the history of the case to the Society somewhat in detail, as serving to illustrate the course of a disease which is often obscure and difficult of diagnosis.

V. M., aged thirty-three years, married eight years since. Consulted me February 10, 1887. Twelve years previous he had his first gonorrhœa, a gleet persisting for three years afterward. A fresh attack occurred soon after recovery, which only lasted a few weeks. About eight years ago noticed a small nodule in either epididymis, about the size of a pea. These nodules were hard and painless, and, I may say at once, never changed their character during the patient's life. Four years ago he began to suffer from frequent urination.

Coincident with the appearance of frequent urination the stream grew smaller.

These symptoms remained unchanged during the next two and a-half years, when he sought surgical ad-

[1] Read before the Suffolk District Medical Society, at the Annual Meeting, April 28, 1888.

vice. The diagnosis of stricture was made, and the patient was operated upon by the method of divulsion. The previous symptoms were at once aggravated. The operation was followed by chills and fever, and he lost in a few weeks thirty pounds weight. On recovery from the acute attack, however, a No. 16 English steel sound could be passed readily into the bladder.

Eight months before I saw him he had measles, and on recovery noticed that his urine contained a dirty gray sediment and small clots of blood from time to time. Two months later he entered the Massachusetts General Hospital, where he was treated by the introduction of large sounds, 32 (French), and washing of the bladder with boracic acid solutions. The symptoms were aggravated by whatever local treatment was employed. When I first saw him he had been out of the hospital for two months. He was thin and haggard, had an anxious expression of countenance, was very weak, and walked bent over, and feebly. The desire to urinate was almost constant, and every fifteen minutes the bladder voided an ounce or a few drops of urine, thick with pus. The urine was neutral. (Specific gravity, 1005.) Contained a large trace of albumen. The sediment consisted of pus corpuscles, blood corpuscles, epithelial cells of a great variety of shapes. He complained of a con stant dull pain in the perineum. The prostate, by rectal examination was slightly enlarged. There was no tenderness on pressure over the pubes.

Microscopic examination of the urine for tubercle bacilli was negative.

During the next month internal medication for the relief of the painful cystitis failed to give the least relief. Blood in small quantities appeared in the urine occasionally, independent of exertion.

He was then sent to the City Hospital, where, owing to the kindness of Dr. E. H. Bradford, in whose service he entered, I made a digital exploration of the bladder through the perineum.

The inner surface of the bladder was roughened, as though occupied by very superficial ulcerations. Beyond this the examination was negative.

The operation was not followed by any constitutional disturbance, nor, on the other hand, was any mitigation of the symptoms obtained by it. The patient made a rapid recovery, and the perineal wound was healed at the end of three weeks. He left the hospital, however, in an exceedingly poor condition. The nodules in each epididymis, the marked constitutional disturbance of the patient, wasting and loss of strength, the unvarying presence of pus, and the occasional appearance of blood, the aggravation of the symptoms on every local interference, the total inefficacy of local and medicinal remedies in mitigating the symptoms, and the feeling of the mucous membrane of the bladder led me to the conclusion that I was dealing with a case of tuberculous disease of the genito-urinary tract. The patient was now put upon cod-liver oil, nourishing food, and sent to the country. I did not see him again for three months, when he walked strongly into my office, told me that he had gained thirty pounds in weight, and could hold his water for an hour at a time without difficulty. He then returned to the city. Shortly afterward, that is, about six months before his death, the amelioration in his symptoms ceased, and they returned in their full severity, pain being now a prominent symptom, referred chiefly to rectum and perineum. Rectal examination now showed a greatly enlarged prostate. Defecation became exceedingly painful. About one month later the rectal symptoms suddenly disappeared, and rectal examination showed a prostate of normal size, the inference from these facts being that the prostate had been the seat of a tuberculous abscess, which had finally ruptured into the urethra, causing a disappearance of the swelling. The specimens confirm, as you will see, this view.

The patient now gained again, and a surprising degree of strength and energy returned. Two months later, however, a new accession of bladder pain, with great prostration, supervened, and to-day, after as suffering an illness as I have ever watched, he died.

No clinical evidence of tuberculous disease of parts of the body other than of the genito-urinary tract existed during life. A partial autopsy only was possible. The kidneys, bladder, prostate, membranous, urethra, rectum and testicles were obtained.

In the epididymis of this testicle I have laid open the nodule which was the earliest manifestation of the disease, and apparently its point of origin. It consists of a sac, with a cheesy contents entirely broken down, a process of long standing. Both lobes of the prostate are occupied by the now somewhat shrunken cavities of tuberculous abscesses, containing cheesy material, and communicating by several openings into the prostatic urethra, some of which would admit a No. 12 French bougie.

The whole organ, however, was not enlarged. The bladder-wall was irregularly thickened, the capacity of the viscus small, the mouths of the ureters stood open, and were of a size to admit a goose quill. The mucous membrane was occupied throughout its entire extent by superficial ulcerations. Both kidneys are the seat of a tuberculous pyelo nephritis, the pyramids and cortical portions being occupied by cavities in various stages of development. The case throws no new light of importance on the class of disease of which it is an example, but emphasizes several facts already dwelt on by various writers, amongst which may again be pointed out as assisting in the diagnosis, the slow development of the symptoms, marked remissions in their severity, which are apt to arouse false hopes of the patient's recovery, and prove very deceptive, the constant presence of large quantities of pus of a dirty grayish-white color, the occasional appearance of blood, generally in small clots or mixed with shreds of pus, without exciting cause. The pus in this case was unlike that seen in cases of ordinary cystitis, in that it lacked the mucous and the ropy consistency so often noted in cases of ordinary cystitis of so severe a grade. The alkaline decomposition and foul smell were but slight. The presence of the nodules in either epididymis independent of gonorrhœal process. The evident seriousness of the lesion in a previously strong, healthy man, as shown by the great loss of flesh and strength. The aggravation of the symptoms by all local interference. The total inefficacy of internal medication. The improvement following removal to better hygienic surroundings, and the employment of cod-liver oil and good food. Tubercle bacilli would no doubt have been found had the urine been more frequently examined for them.

The case furnishes another example of the local limitation of the disease in some instances to the genito-urinary tract.

Two of the questions I asked myself while the patient was under my care, were: Was there a time when surgical interference might have prevented the general eruption of the disease along the genito-urinary tract? There was an interval of several months after the appearance of the nodules in the epididymes before urinary symptoms came on. An excision of these nodules might have prevented further progress, and should always, I think, be urged at an early period, when they cannot be definitely traced to a venereal or traumatic source. The second question is: Could any operation have been performed for the relief of the patient's sufferings after the disease was well established?

In another case which presented such suffering as this patient had, I should certainly advise the suprapubic opening of the bladder and the stretching of the vesical neck, in the hope of affording relief to pain. The perineal opening which I made in this patient did not relieve pain. It is interesting in this connection to note two cases of Professor Guyon's, published in the *Revue de Chirurgie*, April 10, 1888, page 314, in which he recommends that the high cut be performed in cases where the disease be limited to the bladder only, with a view to radical cure. It will be doubted by some if the disease ever occurs in this limited form.

His first case was that of a young man of twenty-four years. Cystitis for eighteen months, great pain, tubercle bacilli in the urine. Supra-pubic opening of the bladder, and swabbing out of the bladder with saturated iodoform oil, drainage. The tubes were removed on the seventeenth day. Forty-five days later pain was greatly diminished. Two years and a-half later patient was in excellent health, and the urine was clear, free from pus and bacilli.

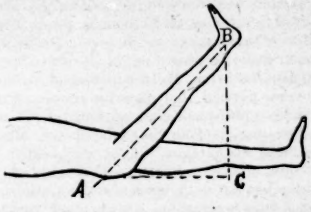
Second case. Man of forty years. Vesical pain for four months. Numerous bacilli. Palliative treatment for four months. Had no effect. Operation as before. Curretted the inner surface of the bladder, and touched it with cautery. Tubes removed on the fifteenth day. Bacilli disappeared six months later. This patient, however, has still a cystitis.

A METHOD OF DETERMINING THE ANGLE OF FLEXION OF THE DISEASED LEG IN HIP DISEASE.

BY GEORGE L. KINGSLEY, A.B., HARVARD MEDICAL SCHOOL.

THE estimation of the amount of flexion of the leg upon the pelvis, in the acute stage of hip-disease, is of much importance as a matter of record and as an indication of the progress of the case. The estimation of this angle is commonly made by the use of the goniometer. As one seldom has this instrument at hand, and as its use is attended with many disadvantages, the following method is offered:

The object of this article is to furnish a ready and accurate method of estimating with a common tape-measure the angle of flexion of the leg, and is intended to be supplementary to the article by Dr. Lovett,[1] on the estimation of adduction and abduction by a similar method. Lay the patient on his back on a table or any flat surface, and then raise the diseased leg by the heel until the lumbar vertebræ touch the table; this shows that the pelvis is in the normal position and the angle which the leg makes with the table, the angle



C A B, is the angle of flexion of the thigh, from the normal position. It is this angle which it is desired to measure. Having placed the child in this position, measure off two feet on the external aspect of the leg with a tape measure with the zero of the tape on the table at (A), and note the point (B), from here measure the perpendicular distance in inches to the table (C), consult Table I and opposite the number of inches found by measuring B C, will be found the number of degrees representing the flexion of the diseased leg from the normal position.

Now we have a right-angled triangle A B C, of which the sides A B (24 inches) and B C (by measurement) are known. $\frac{BC}{AB}$ = sine B A C (the angle of flexion), or B C = A B sine B A C. Therefore, if we compute by this formula a table which shall give the angles corresponding to the various lengths of B C, having measured this perpendicular distance (B C) we can by glancing down the table until we find the number corresponding to the distance measured, ascertain the number of degrees in the desired angle.

TABLE I.

In.	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*	*In.*	*Deg.*
.5	1	6.5	16	12.5	31	18.5	50
1.0	2	7.0	17	13.0	33	19.0	52
1.5	3	7.5	19	13.5	34	19.5	54
2.0	4	8.0	20	14.0	36	20.0	56
2.5	6	8.5	21	14.5	37	20.5	58
3.0	7	9.0	22	15.0	39	21.0	60
3.5	9	9.5	24	15.5	40	21.5	63
4.0	10	10.0	25	16.0	42	22.0	67
4.5	11	10.5	27	16.5	43	22.5	70
5.0	12	11.0	28	17.0	45	23.0	75
5.5	14	11.5	29	17.5	47	23.5	80
6.0	15	12.0	30	18.0	48	24.0	90

If the leg is so short that it is impracticable to measure off twenty-four inches we can measure to a point on the leg distant twelve inches from the table, ascertain the distance to the table in a perpendicular line just as before, double this distance and look in the table as before.

[1] Boston Med. and Surg. Journ., March 8, 1888.

REPORT ON PROGRESS IN DERMATOLOGY.

BY G. H. TILDEN, M.D.,
Physician to City Hospital, Department of Diseases of the Skin: Instructor in the Boston Polyclinic.

TREATMENT OF LUPUS ERYTHEMATOSUS.[1]

THE treatment of this disease being an uncertain and often thankless task, the following lecture upon the subject by an eminent authority is of interest. The treatment of lupus erythematosus is essentially different both in ways and means, from that of lupus vulgaris. In the case of lupus vulgaris it is possible by chemical or mechanical means to destroy and get rid of the pathological infiltration which constitutes the disease. When this has been done and the loss of

[1] Kaposi. Allgemein. Wiener Med. Zeitung, No. 8, 1888.

tissue thus occasioned, has been replaced by healthy granulation tissue, then something definite has been accomplished. It is beyond our power to prevent the occurrence of new nodules of infiltration, but those which exist can be entirely removed, the difficulties in the way consisting in the localization, distribution and amount of pathological tissue which may be present. With regard to lupus erythematosus the affair is in certain respects more difficult, in others more promising than is the case in lupus vulgaris. In lupus erythematosus we have to deal with an inflammatory process, which is peculiar in the fact that the inflammatory infiltration eventually undergoes a change which is probably fatty metamorphosis, and from its absorption there results an atrophy and shrinking of the cutaneous tissue. This inflammatory process is not confined to the sebaceous glands and their neighborhood (as suggested by the name seborrhœa congestiva), but may occur anywhere in the skin where there are bloodvessels, and if the disease has advanced to the stage of atrophy of tissue, it is impossible to remedy the defect which has taken place.

The primary object in the treatment of lupus erythematosus is to induce in some way a cessation of the inflammatory process before fatty degeneration and atrophy of tissue have occurred. If this result be obtained then the disease disappears without leaving behind any trace of its existence. Such an arrest and disappearance of inflammatory infiltration can in no case be induced by the use of caustics, but it may and does occur without any treatment whatever, and in the worst instance, lupus erythematosus if left to itself, never results in the formation of ulcers and deep-seated cicatrization such as are met with in lupus vulgaris. It is all important, therefore, in the treatment of lupus erythematosus never to employ means which will do more damage than the disease itself will occasion. The outlook, however, is unsatisfactory, inasmuch as it is impossible in any given case to state beforehand what sort of treatment is going to produce a good result or whether the treatment employed may not by reason of the irritation it causes, induce an extension of the disease, which otherwise might not have taken place. It is this uncertainty of result and prognosis which renders the treatment of lupus erythematosus so eminently unsatisfactory, and in no instance is it possible to give any definite opinion as to how long the disease will last or as to the result of treatment.

The corollary of all this is that treatment should always be begun with the application of remedies which are mild in their action. Often more will be accomplished in this way than by the use of more active measures. The first thing to be tried is rubbing the diseased regions of skin with various kinds of soap, toilet soap, soda and potash soaps, soft soap and spiritus saponatus kalinus. The soap should be applied to the skin with energetic friction every day, and it is noticeable that the spots of lupus erythematosus do not readily become excoriated. Often the healthy skin in the neighborhood will be deprived of epidermis much sooner than a spot of lupus erythematosus. This is the case whether soap, or other and more active remedies are employed, and is due to the fact that one of the essential features of the disease is, that the sebaceous glands involved, produce a thick, overlying layer of accumulated and fatty epidermis, which is more resistent to the action of soap or caustics than is normal epidermis. After a spot of lupus erythematosus has been rubbed with strong soap, there oozes from the lesion a small amount of serum which should be allowed to dry, forming a small yellowish crust which falls off in four or five days. If, after this, the edge of the inflammatory patch remains flat and does not extend peripherically, it signifies that the treatment has been beneficial. If signs of irritation appear, the border of the infiltrated patch becoming elevated and the redness increasing in extent as well as in degree, then indifferent and soothing substances should be applied until the inflammatory exacerbation subsides. In the same way may be used in various strengths caustic potash and pure ammonia water, also mild acid applications of acetic, muriatic or carbolic acids. The strong acids, especially mineral acids, such as sulphuric, nitric and chromic acids should never be used. Whenever the stronger applications have been used and have effected nothing, one should go back again to the milder remedies, for what is inefficient at one time may be beneficial at another. Tar, in combination with various soaps, such as sulphur and napthol soap, or in the ointment known as Wilkinson's ointment, sometimes produces good results. Occasionally applications of ice, lead water or of liquor Burowi are beneficial, and of the regular caustics the best are pyrogallic acid, salicylic acid, chloride of zinc and arsenic paste. Brilliant results are sometimes seen from the application of mercurial plaster. In cases where the disease is extensive the best treatment consists in the use of tar and mercurial plaster, applied to small regions of the disease at a time. Patients with lupus erythematosus have a certain tendency towards anæmia and phthisis, and in most cases, good diet and pure air, are needful, together with arsenic, iron and cod-liver oil.

PATHOLOGY OF LICHEN RUBER.[2]

Since the year 1880 the writer has collected fifty-two cases of lichen ruber, of which number thirty-five occurred in men and seventeen in women. Seven of these cases exhibited also lichen affecting the mucous membrane of the mouth and tongue. In only two instances did the disease take the form of universal lichen ruber acuminatus, and this variety of the malady was found to be much more intractable to treatment by the administration of arsenic both by the mouth and by subcutaneous injection, than lichen planus. The mixed form occasionally met with was not found to be especially obstinate as regards treatment, however.

The possibility of a neuropathic origin of lichen ruber was first suggested to Köbner by the case of a woman forty-five years of age, who was affected simultaneously with widespread lichen ruber acuminatus and with the early symptoms of progressive bulbar paralysis. In this instance the skin of the whole body was red, the color of a raspberry, and the woman was covered from head to foot with elevations of the skin, rough, like a file, between which there existed islands of normal skin, which appeared as depressions of the general surface. Besides the paralytic symptoms, the patient suffered from intolerable itching, and presented a high degree of emaciation.

In another instance the localization of the cutaneous eruption followed closely the distribution of certain

[2] Köbner. Berliner Klin. Wochenschrift, 1888, No. 20. Centralblatt für die Med. Wissenschaften, 1888, No. 8.

cutaneous nerves, and in the same case a recurrence of the eruption was confined in its distribution to exactly one side of the penis. As further evidence of the neurotic origin of lichen ruber, Köbner mentions the intense itching which deprives the patients of sleep, and which may long precede, as well as accompany the cutaneous eruption. The majority of patients, also, who suffer from this malady, are of the neurotic type, and the affection often follows mental shock, worry and anxiety. It is worthy of notice, also, in this connection, that in many cases the outbreak of lichen was preceded by attacks of urticaria, which in one instance outlasted the lichen by one year and a half. In many instances the patients exhibited a sensitive condition of the vaso-motor system, which manifested itself by the ready formation of the so-called "taches cérébrales" upon irritation of the skin. Occasionally, also, the eruption seemed to be produced by scratching, or by the irritation due to the pressure of some article of clothing. Contrary to Lassar's experience, no connection could be made out between the occurrence of the disease and the occupation of the patient, and in no instance could any form of micro-organism be detected in microscopic preparations made from the cutaneous nodules peculiar to the disease.

A FORM OF CHRONIC INFLAMMATION OF THE LIPS AND MOUTH, WHICH SOMETIMES ENDS FATALLY AND IS USUALLY ATTENDED BY DISEASE OF THE SKIN AND NAILS.[3]

The author's attention has been drawn during the past ten years to certain cases of a peculiar variety of disease, in which a severe form of ulcerative stomatitis was followed by disease of the skin, and which sometimes, after a duration of several months, ended fatally. These cases are important by reason of their severity, from their close resemblance, in some instances to syphilis, and from the fact that they are curable, for the most part, by one remedy only. On this latter point the author speaks with caution, because the evidence with regard to it is not complete. There appears, however, reason for believing that small doses of opium, frequently repeated, will usually cure the malady, which resists all other drugs, and tends slowly but surely to end in death. The author is not prepared to offer any suggestions as to the pathogenesis of this disease, but merely describes its clinical features. In all of the best marked examples of the affection seen by Hutchinson, the patients have been men, generally past middle life, living in the country, enjoying until the beginning of the attack, excellent health, and in positions which enabled them to secure all the comforts of life. In some less well marked cases the patients were residents of London. The writer considers it not improbable that the pathological condition of the system which gives rise to this form of stomatitis may be allied with that which is at the root of certain forms of skin disease, notably pemphigus, in which the constitutional symptoms are severe, and in which the mouth is occasionally affected. In pemphigus, however, the cutaneous manifestations always precede the affection of the mouth, whereas, in the form of disease under consideration the reverse is the case.

The first instance of the malady seen by the author occurred in a master currier of fifty-eight years of age, who began to be ill during the end of December, 1879, and died in about four months. His illness commenced with soreness of the mouth, which was quickly followed by swollen hands and feet "like chilblains." Later on a vesicular eruption appeared on his hand, with inflammation of the nails, and there was spontaneous ptyalism with sore throat and lips. Then a bullous eruption extended over the whole body, and the nails fell off. Lastly large masses of granulation tissue developed on the excoriated surfaces left by the bullæ and some of these masses became pedunculated. The man died from exhaustion, and the autopsy showed some recent broncho-pneumonia with pleurisy, on the left side, and also the existence of a large lympho-sarcomatous tumor situated in front of the spine, and embedding the pancreas and large vessels. The existence of this tumor was not suspected during life, and the writer is inclined to regard it merely as an accidental concomitant of the disease. The next case occurred in a gentleman whose age is not given, and began with a "very severe form of inflammation of the mucous membrane of the mouth, the whole interior of the mouth being intensely reddened, and exhibiting on the arch of the palate, on the tonsils and pharynx, patches of very delicate pellicular whiteness, which looked as if they had been produced by the application of caustic." In a few weeks there was developed ptyalism which became constant, then appeared in the flexures of the joints, moist and warty growths, followed by suppurating inflammation of the nails, and by the development of a pemphigoid eruption over the whole body. After the illness had lasted five months the patient, who had become emaciated and weak, died from exhaustion. The post-mortem examination revealed no structural disease except recent hepatization of the lower lobe of the right lung. These two are the only fatal cases of the disease which have come under the author's own care, and in neither of them did treatment, principally by arsenic and quinine internally, have any effect whatever. In the second case, opium was given, but not until the very last stages of the malady. Two other cases, in which the stomatitis was severe, but in which the cutaneous symptoms never became formidable, have been also seen by Hutchinson. They both occurred in males, forty-six and fifty years of age respectively. They began with superficial ulcerations of the mucous membrane of the mouth, the margins of which were reddened, and the bases of which were covered by a distinct pellicle of a grayish color, the removal of which caused bleeding. In one case, after the affection of the mouth had lasted some three months, there appeared some patches of a sort of papillary psoriasis on the backs of the hands, his toenails became inflamed, and several of them were lost. In the other instance there was no affection of the skin except a lichenoid eczema of the left side of the abdomen, which had existed for some years. In both cases there was much weakness and loss of flesh, and in neither did the treatment by arsenic, quinine, iodide of potassium, the use of various mouth washes, and the application of caustics to the ulcers, have any effect whatever. Both cases recovered permanently under the use of small and often-repeated doses of opium. Another and very similar case, occurring in a farmer, sixty-six years of age, and who became very weak and much emaciated, recovered permanently un-

[3] Jonathan Hutchinson. Medico-Chir. Transactions, Vol. lxx, p. 421.

der the administration of opium for several months. A sixth instance of the malady, the patient being under the care of another physician, was also seen by Hutchinson, but the treatment by opium was not resorted to until a late period in the disease, and the patient died. In this last case the affection of the mouth was coincident with an eruption of the skin, the exact nature of which is not stated.

These six cases are regarded by the writer as examples of the severer form of the disease. In three instances death resulted. In two the patient is known to have recovered under the opium treatment, and, to have remained well. All the patients were men, and none of them were under forty-five years of age. All had been in good health until the first symptoms of soreness of the mouth occurred. In all the three fatal cases, the inflammation of the skin which followed the affection of the mouth was extensive and severe, while in the three which recovered it was but slight, in two, indeed, being almost absent. In one of these three, although the eruption was but very limited in extent, affecting only the hands and feet, there was the peculiar feature of inflammation of the toenails, and from four of the toes the nails were shed. In none of the fatal cases had the opiate treatment been tried until within a very short period of death.

In the next group of similar, but less severe cases, the author mentions instances in which are still encountered the combination of sore mouth and an eruption on the skin, the soreness of the mouth taking precedence in point of time over the skin disease. In these cases, however, the disease showed itself much more amenable to treatment, and, indeed, the patients occasionally recovered without any definite treatment. The disease also showed a tendency to recurrence after a few years' interval. One of the patients in this group was a woman thirty-five years of age, and the other two were men, aged, respectively, thirty-six and forty-six years. In one of these, arsenic effected a definite, but temporary, cure on more than one occasion. In two of them the beneficial effect of opium was very marked, in one a rapid cure taking place under its influence. In none of these three cases was there any approach to the failure of health which took place in the cases included in the first group. The patients in this group being younger than the others, suggests to the writer that the age of the patient may have something to do with determining the severity of the affection. The cutaneous eruptions in these cases were of various kinds, in one instance consisting of dry and scaly superficial patches on the body, combined subsequently, with an abundant eruption of erythema multiforme upon the hands; in another, of patches of erythema upon the hands and feet, which vesicated, but without producing bullæ. In all of these the affection of the mouth consisted in an acute stomatitis, attended with the formation of superficial excoriated patches, which were covered with a whitish, pellicular membrane, the removal of which caused bleeding.

In conclusion, the author remarks that none of these cases seem to throw any light upon the real cause of the disease. It may, however, be conjectured that it is allied to some of the severe forms of skin disease which are attended by failure of the general health, and which tend to a fatal issue. Examples of this are seen in pemphigus, of which the natural termination is death in six months, unless cured by arsenic, and in which, as a further feature of resemblance, the mouth is in some cases affected, as well as the skin. Nor is pemphigus the only instance, for pityriasis rubra and certain rare forms of psoriasis and lichen ruber and planus, especially when occurring in the aged, show a tendency to end in death by exhaustion. The precise form of the skin eruption does not seem to be of much consequence, for whatever it is, if it become very extensive, the patient's strength may fail and death result. It is a very remarkable fact that these diseases, like the one described, almost always begin in those who, up to the time of the attack, have been in excellent health. The failure of health always appears to be due to the extension of the local disease. The features in which the cases described differ from those just referred to, is that the mouth became inflamed before the skin was affected, and suffered throughout with preponderating severity. The disease of the skin differed much in the several cases. In one it appeared to be a direct extension from the lips to the skin of the chin, which became greatly thickened and covered with papillary outgrowths. In others there was developed a bullous eruption, resembling pemphigus in appearance. In several instances, warty excresences occurred in great abundance in the flexures of the joints, while in two instances a few eczematous patches on the hands and abdomen constituted all the skin affection that ever showed itself. In all the severe cases the nails became inflamed. It is impossible not to be struck with the apparently specific efficacy of opium and the uselessness of other drugs. The writer thinks it may be fairly asserted that in all the cases where opium was given early enough, it cured the patient, not only removing the local symptoms, but restoring perfect health, and he does not doubt but that this observation of the usefulness of opium may with advantage be extended to many chronic maladies affecting the skin in elderly persons.

A striking example of the beneficial effect of opium in this direction is given by Hutchinson at the close of the article. The patient was a woman sixty-one years of age, who had been in good health until her hands began to inflame. The disease took on the form of a sort of exfoliative dermatitis, which developed with exact symmetry on hands and feet, and gradually spread. All the nails were inflamed, and when the process invaded the scalp all the hair fell out. No treatment had any effect in arresting the progress of the malady. She was treated by Hutchinson for four months with arsenic, phosphorus, and other remedies internally, and various local applications, but with no better result. Things kept growing worse and worse, and her general health became visibly affected, the patient being bald, emaciated, and with hands and feet rendered quite useless by the malady. Opium was then prescribed. Improvement began immediately, and after about four months' continual use of this remedy the patient was in excellent health, her hands were quite well, and all her hair and nails had grown again. At the time the paper was read the opium had been laid aside for three months, and there was no recurrence of the malady, but subsequently there appeared some slight symptoms of a relapse.

— A training school for colored nurses is connected with the Spellman Seminary, Georgia.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY.

H. L. BURRELL, M.D., SECRETARY.

ANNUAL meeting, Saturday evening, April 28th, at 19 Boylston Place, 8 P. M., DR. JOHN HOMANS, President, in the Chair.

Records of the previous meeting read and approved.

A list of the deaths and removals was then read.

The Secretary read a communication relative to the establishment of a hospital for the treatment of inebriates.

There was then read a communication from the Georgia Medical Society, in reference to the furnishing of medical and surgical supplies free of duty.

On motion of DR. J. J. PUTNAM, the matter was referred to a Committee, and the President referred it to the Committee on Supervision.

Dr. J. J. Putnam read the paper of the evening, on

DISEASE CAUSED BY MEDICINAL DOSES OF ARSENIC, WITH REMARKS ON THE DIAGNOSIS OF MULTIPLE NEURITIS.[1]

DR. C. F. FOLSOM said: I do not know that I have anything to add to the paper. I have been extremely interested in it, and certainly can second everything that Dr. Putnam has said in regard to the diagnosis of multiple neuritis. If I recollect correctly, the first case that I recognized as such was in 1881. It was then an extremely uncommon disease. There had been very few cases in the wards of the City Hospital, and scarcely any cases reported as such in the outpatient department. At the present time it is a very frequent disease, or else we are very often making the diagnosis where it does not belong. I think that it is undoubtedly frequent, but it is quite possible that we may be swinging the pendulum a little too far in that direction. A great many cases, as Dr. Putnam says, are obscure and difficult of diagnosis because the usual symptoms do not occur. In many cases, also, the etiology is extremely difficult, so that it seems to me, before settling on any one factor, especially an unusual factor, one should be extremely careful to exclude all other possible causes.

I remember a case, for instance, which Dr. Lyman was kind enough to send me some time ago, a thoroughly well-marked case of multiple neuritis, in which it was for some time quite difficult to get at the cause, but it finally appeared that the lady had had two small children with diphtheria, and that she had been present in the sick-room for a great part of the time. She did not know that she had diphtheria at that time, but, considering the peculiar character of the multiple neuritis, I have no doubt that it was post-diphtheritic. In the same way, we have cases which are diagnosed as locomotor ataxia, in which, if you give iodide of potassium, the symptoms disappear; that is to say the case was one of multiple neuritis of syphilitic origin.

Sometimes, for instance, patients deny syphilis, and you learn from the physician who has seen them before that they had some signs of syphilis, and got well under syphilitic treatment. I don't say this to throw doubt upon the diagnosis in this case, but to make prominent the necessity of being very careful to exclude all possible sources of error in diagnosis. The question arises in this case whether the multiple neuritis, granting the diagnosis, of course, is due to arsenic given in the prescribed quantity, namely, five minims, t. i. d., so long ago and for so short a time. If so, I should stop prescribing arsenic altogether, valuable as I consider it. In this case, it seems to me, there is doubt whether the arsenic given is the real cause of the disease, if, as I understand, the gentleman improved while taking an asthma remedy containing arsenic.

DR. PUTNAM: He was not taking that at that time.

DR. FOLSOM: Even then, there are a great many other sources of arsenic. I recall a patient who has been under my care for between two and three years; that is to say, I am the only person who has prescribed for her during that time. During this past winter she had evident symptoms of arsenic-poisoning. Dr. Hasket Derby was kind enough to see her in consultation with me. We have never found the source of the arsenic. There was no question whatever what it was, and the lady got quite well by leaving the suite of rooms in which she was living. There was no question of its being arsenic-poisoning. There was no arsenic in the wall-papers, but we did not examine everything in the suite, carpets, etc. That case illustrates the difficulty of making a diagnosis, and in my mind it would throw doubt on the diagnosis of multiple neuritis from arsenic given in medicinal doses, unless all other sources of arsenic are excluded. It is one which, of course, would be followed with a good deal of interest. I have seen something like ten cases of arsenical neuritis reported in the medical journals in the last three or four years, most of them from large poisonous doses; a few of them were from smaller quantities taken into the system over a very considerable period of time. The fact that, in the case reported this evening, arsenic was found in the urine five months after it was given up as a prescription, I should think would throw doubt on its origin.

DR. P. C. KNAPP said that he had listened with great interest to Dr. Putnam's paper, for he had under his care at the present time a case of mild arsenical paralysis from poisoning from wall-paper. He could add nothing to Dr. Putnam's account of paralysis from medicinal doses of arsenic; certainly, as Dr. Folsom said, five minims three times a day for six weeks was a remarkably small dose to produce neuritis. He had never given very large doses of arsenic, rarely exceeding eight minims of Fowler's solution, and in those doses he had never seen paralysis, although he had, of course, seen the ordinary symptoms of gastro-intestinal irritation and swelling of the eyes.

DR. F. C. SHATTUCK spoke of a patient now under his care and suffering from an unquestionable neuritis, thus far at least, of only moderate intensity. This patient is a young married lady, a niece of Dr. Putnam's patient, and has this winter been much shut up in the house. The neuritic symptoms first appeared about three weeks ago, and consist in constant dull pain in the arms and legs, with stiffness of the joints, particularly the knees, and well-marked tenderness on pressure, not only over the main nerve trunks of the extremities, but also over the muscles themselves. A week ago samples of wall paper were sent Professor Wood, who found the paper of the library, the room in which, next to her bedroom, the lady passes most time, to contain a dangerous amount of arsenic. A sample of urine was then sent, and Professor Wood

[1] See Vol. cxviii, p. 646, of the Journal.

has been so kind as to hasten the analysis that its result might be reported this evening. He finds a trace of arsenic in the urine. Have we here the cause of the neuritis? There is no other apparent causative agent operative in the case. The near relationship between the two patients is of interest, and suggests the question whether there is any constitutional sensitiveness to the metal common to them both. We are everyday struck by the remarkable difference between individuals in the toleration of, or resistance to, toxic influences of various kinds.

This difference in resisting power is shown, perhaps as well as by anything else, by the wide differences in the toleration of alcohol. Can we not explain in a similar way the fact — for Dr. Putnam certainly seems to give us grounds for holding it to be a fact — that in certain persons a comparatively small amount of arsenic produces marked changes in the peripheral nerves?

Dr. Webber said: I have been very much interested in Dr. Putnam's paper, and think he has brought up a subject which it is well for us to keep in mind, that there is a possibility of persons being poisoned with arsenic when it is given in medicinal doses long continued. Whether six weeks is long enough to be poisoned I think is very doubtful, but I have had patients sent to me, children with chorea, who had been taking small doses of arsenic for what seemed to me an unreasonable length of time, much longer than seemed to me was safe; taking doses which were entirely insufficient to relieve the disease — three or four drops of Fowler's solution — instead of running the dose up to as much as the patient will bear. Dr. Putnam has mentioned one case from a journal in Canada where twenty or thirty drops were given. That seems to me a large dose, and could hardly be called a moderate or small dose. The fact that the pains are about the joints, and that the joints are chiefly affected, might lead to the question whether or not the muscles which are affected are not affected secondarily to the disturbance of the joint, as Charcot has shown that the joint affections are followed by a disturbance in the nutrition of the muscles; and in some of the cases where the electrical reaction is not very much disturbed, whether it may not be secondary to the pain in the joints, and not due to the direct disturbance through the nerves.

It is interesting to notice, as Dr. Folsom has mentioned, how neuritis has come forward prominently, and so many different causes giving rise to it, and the variety in the symptoms. It seems to me it is a subject still requiring investigation how these various remedies affect the nerves, what portion of the nerve structure is affected. It is a subject open to experimental investigation, I think, and might lead to important results. The neuritis from lead, from alcohol, from arsenic and sulphide of carbon, and other causes, the neuritis which follows disease, such as the various fevers. It would, I think, lead possibly to very important results if we could have that investigation.

I think that Dr. Putnam, in closing his paper, has made some very important statements as to the caution and care necessary in using arsenic, in the fact that arsenic may be cumulative. That we should bear in mind that if it is not eliminated, there is a chance for such an explosion as he has mentioned.

Dr. Bullard: I would like to ask Dr. Putnam one question, and that is whether every other possible source of the arsenic was examined in this case, and whether it was simply supposed to have been the medicine.

Dr. Putnam: I cannot say whether it might not have been so. The only thing there could have been suggested was the wall-paper and the carpets, and this was a house where he had lived many years. Still, that inquiry ought, of course, to be made.

Dr. Buckingham: I would like to ask the question whether, when the multiple neuritis follows, we are to have any warning before the explosion occurs; any warning to enable us to stop the arsenic.

Dr. Putnam: I only want to say a few words. It seems to me that I entirely agree with Dr. Folsom that it is unadvisable to make extraordinarily apparent the consequences of a familiar process unless they can be well proved. At the same time, I think it is fair, at least, to inquire from time to time whether there are a number of facts that come together and support a rather unfamiliar fact; and that is what I attempted to do here. Of course, we all know that we give five drops of arsenic, and many people are capable of taking more than that, not only for six months, but for an indefinite time without injury. What one can take indefinitely, another person cannot take even for a very short time. The peculiarities of the patient and the conditions of elimination may entirely alter the circumstances of the case.

Now, in regard to the question whether that dose is too small to cause paralysis, I maintain that, as a matter of fact, if we can believe the reports — of course they are open to doubt also — but there are pretty straight reports which tend to show that the small doses do cause serious symptoms. I refer again to the young woman who took three minims in seven days and became prostrated. Another patient had serious rheumatoid pains by taking two drops of Fowler's solution, and had to take to the bed. There was the man who took six drops for two months, and then a smaller dose for another month, in whom it produced symptoms of irritation of the stomach.

With regard to the question that Dr. Buckingham asked, we have the report of the case of a lady who took a course of arsenic under the observation of a London practitioner who had had great experience in the use of the drug, although it was in 1863, and he may have given very large doses. After a time she was suddenly attacked with paralysis of the hands and feet. In another case a patient took from three to five minims, and suffered paralysis of both arms and legs, and great weakness.

Another patient took arsenic for a time without any symptoms, and then suddenly the symptoms came on. These seem to indicate that we do not know all about the matter yet. It is perfectly fair to throw open the possibility, at any rate, that such results as I record to-night may occur. It is very well known that serious paralyses result from the action of arsenic in wall papers, and yet the amount taken in that way is generally considered pretty small. The person is breathing the air of the room only a certain time, and it may be that the arsenic becomes changed into vaporous form so that it may be absorbed, yet the quantity must be very small or more serious consequences would occur. As a matter of fact, the results are not severe.

With regard to the matter of elimination, it is perfectly true, as Dr. Folsom has said, that elimination is generally considered complete in six weeks, but it evi-

dently is not the case. This woman whom I speak of stopped taking arsenic six months before she died. I say she stopped, for the symptoms came on at that time. At least, we may say that she is not likely to have taken it; and yet, after death, traces of arsenic were found in the viscera, the liver and bones. With regard to the matter of rheumatic neuritis, of course it is perfectly possible that the person may have that disease, but I should be inclined to say that the rheumatic neuritis is about as rare as the arsenical neuritis, if we compare the number of persons who have the rheumatic neuritis in reference to the exposure. The rheumatic neuritis is an excessively rare thing in my experience. Moreover, this neuritis came on in the summer weather of June. So that, while I agree that the case is not by any means proved to be an arsenical neuritis, or that the arsenic found in the urine six months after the last therapeutic dose was taken is the remains of that therapeutic dose, still it seems to me that both of these hypotheses are admissible as such, as a basis for further investigation.

DR. F. S. WATSON then showed the specimens from

A CASE OF TUBERCULOSIS OF THE BLADDER, PROSTATE AND KIDNEYS, ORIGINATING IN TUBERCULOUS EPIDIDYMITIS.[2]

DR. JOHN HOMANS showed a piece of omentum, weighing some two pounds, removed during a McEwen operation for the radical cure of hernia.

MR. H. R. HEYDECKER showed a new trocar which he had invented, for tapping ovarian cysts.[3]

The report of the treasurer, Dr. Buckingham, was then received, and an auditing committee appointed by the chairman. It was voted that an additional assessment of one dollar be made for the coming year.

DR. DAVID W. CHEEVER presented the report of the majority of the nominating committee.

DR. A. B. MORONG presented a minority report. He said: I make this minority report with a little explanation. I differ from the majority of the nomination committee with reference to the nominations of the council only. I agree with them entirely in the nominations for the other officers. The reasons for my dissenting from the nominations that they have made are as follows: In the list passed round the Society will notice that only two changes have been made in the council over last year. One was an addition, necessitated by the increase in numbers, and the other was due to resignation on the part of the last year's incumbent. It will be remembered that in the October meeting of 1886, there was a discussion about more frequent changes. There was brought before the Society an amendment to the By-Laws in reference to the changing of the entire council every five years. After lying over six months until the April meeting, it came up again, and at a very full meeting of the Society a vote was had upon the amendment. It failed of adoption by a two-thirds majority by only five or six, a very large majority of those present voting for it.

Such being the case, I felt it my duty to urge changes which I deemed the majority of the Society desire. It came out in the course of the meeting that there were seven or eight members of the council of the previous year who had stayed away from more than one-half the meetings. Now, in the absence of any rule which forbids any one from serving more than a certain length of time, it seems a fair basis to work upon, if changes were to be made without prejudice, to base our changes on the attendance. It was found that there was one member who had not been present through 1885, another person had been present at only sixteen meetings during his time of service; another, twenty-seven; another, forty-one; another, forty-five; another, forty-seven. There were seven or eight persons who stayed away, whatever the reason may have been; and it seemed to me, in view of the expression of the wish of the majority of the Society, that there should have been more changes, that we might at least have made seven or eight changes; and I have cast my vote in favor of what I deem to be the desire of the majority of the Society.

DR. CHEEVER: May I be allowed to say one word in explanation of the committee's action; I have had the honor to be the chairman of the committee I think for three years. During that time twenty-five per cent. of the councillors have been changed. That is, one-fourth in three years. It seemed to the majority of the committee, after a full discussion the other evening, that it was time to call a halt for a short time, for this year at any rate, because, on looking over carefully the list of available candidates and of suitable persons, it seemed that if we went on the basis of changing as we have been doing, that very many of those gentlemen who have had experience in the Society, and who have been useful, would be left out; and that, moreover, the younger graduates, who have to take their places, would, in the course of five or ten years, have exhausted the list down to the very youngest graduates; so that, if the change were going on so rapidly as that, the council would hardly be considered the representative of the more mature members of the Society.

I admit, we all admit, that attendance at the meetings is very desirable. These councillors are delegates; they are elected to come here and attend to the business of the Society, and certainly they ought to come; and I am happy to say that out of the fifty-two only six or seven can be found who have not attended somewhere from sixty to seventy per cent. of the meetings. Some of the gentlemen, I think, are kept away from the meetings by their engagements, and occasionally, of course, cases of absence occur from sickness. Still, the percentage of attendance is very fair, and it seemed to the committee, that, inasmuch as they had made some pretty sweeping changes since they have come upon the field, it was best to pause for one year, and make only those changes which circumstances rendered necessary in the council this year, namely, one by resignation and one by death; and I think, perhaps, we were entitled to the additional member by the growth of the Society. This is an explanation, only, of our action, and should the Society, at any future time, order differently, of course the committee who may be appointed then, may feel at liberty to make any change which may be proper.

There is another point which I would like to speak of. There are some three or four gentlemen in the list of councillors, who have given a great part of their lives to the use of the Society. They are growing old and infirm. Unless there are especial reasons to the contrary, it seems rather inappropriate to dis-

[2] See page 4 of the Journal.
[3] See Volume cxviii, page 601 of the Journal.

turb them in their relation, unless they wish to be left off. There were several instances of this kind which were considered in the committee and it was thought best to allow time, which very soon will make changes, to make them itself for the coming twelve months.

For President, John Homans; *For Vice-President*, George W. Gay; *For Secretary*, H. F. Vickery; *For Treasurer*, Edward M. Buckingham.

For Librarian, B. Joy Jeffries; *For Commissioner of Trials*, Charles W. Swan; *For District Nominating Committee*, George H. Lyman; *For Committee of Supervision*, F. Minot, H. M. Hodges; *For Committee on Social Meetings*, Vincent Y. Bowditch, Frank B. Harrington, Harold Williams, G. A. Leland; *For Censors*, Elbridge G. Cutler, Charles M. Green, J. H. McCollom, G. M. Garland, H. L. Burrell.

For Councillors, S. L. Abbott, J. Ayer, H. J. Barnes, H. J. Bigelow, C. J. Blake, H. I. Bowditch, E. H. Bradford, F. E. Bundy, J. S. F. Bush, A. T. Cabot, J. R. Chadwick, D. W. Cheever, J. W. Cushing, O. W. Doe, F. W. Draper, S. H. Durgin, T. Dwight, T. W. Fisher, R. H. Fitz, C. F. Folsom, M. F. Gavin, J. O. Green, F. B. Greenough, W. H. H. Hastings, W. C. Holyoke, J. Homans, W. Ingalls, G. F. Jelly, B. J. Jeffries, F. I. Knight, G. H. Lyman, A. E. McDonald, F. Minot, A. Post, C. B. Porter, J. P. Reynolds, W. L. Richardson, T. M. Rotch, G. B. Shattuck, G. C. Shattuck, B. S. Shaw, A. D. Sinclair, A. M. Sumner, C. W. Swan, G. G. Tarbell, O. F. Wadsworth, J. C. Warren, A. P. Weeks, J. C. White, E. N. Whittier, E. Wigglesworth, H. W. Williams.

The Society then proceeded to ballot, and it was announced that the foregoing list of candidates was elected.

MASSACHUSETTS MEDICAL SOCIETY.

COUNCILLORS' MEETING.

The annual meeting of the Council was held at the Medical Library, Boston, on the evening of Tuesday, June 12, 1888. One hundred and nine Councillors were present. The meeting was called to order by PRESIDENT GAGE, at seven o'clock.

The Secretary announced the names of eighty-seven Fellows who had been admitted during the year, and of thirty-three who had died.

FINANCES.

The Treasurer's report showed the year's receipts — including a balance of $2,315.21 from the previous year's accounts — to be $11,314,86. The disbursements amounted to $8,799.15, leaving a balance of $2,515.71. The invested funds of the Society amount, to $33,420.17. The Society now bears upon its catalogue the names of 1,690 members.

The report further stated that assessment dues to the amount of $190.00 have been remitted by vote of the Councillors, upon the recommendation of the Committee on Membership and Finances. Twelve members of the Society have lost their membership by removal from the State, and neglect of their assessment obligations. Since the last annual meeting the names of two Fellows have been dropped from the roll, with the approval of the Council, in accordance with the By-Laws, for five years' delinquency in assessments. Sixteen members have resigned their membership, and four have been reinstated by vote of the Council.

In accordance with the recommendation of the committees on Membership and Finances, reporting through Dr. Minot, it was voted that one-half of the balance remaining in the treasury, amounting to $1,257.85, be distributed among the District Societies.

On recommendation of the same Committee, dues were remitted to several Fellows, others were allowed to resign, and still others were permitted to become retired members.

DR. SHATTUCK reported for the Committee on Publication as follows:

The late Dr. George C. Shattuck, by his last will and testament, gave a fund to the Society, directing that the net income of the same shall be applied from time to time, in the discretion of said Society, or of its government, to the collection and publication annually by some suitable person, of historical or other essays on the climate of the Commonwealth, or on the diseases of its inhabitants, and on such other subjects as the said Society or its government may select.

In 1877 the Council directed the committee to offer prizes for essays from this fund; and the first year four essays were handed in, three of them of such merit that it was very difficult to select the one to the writer of which the prize should be assigned. Subsequently no essays worthy of a prize were offered. Three years and a half ago the Council authorized the Committee on Publications to offer a prize of one thousand dollars for an essay worthy of a prize, on the climate and its modifications as influencing health and disease, or on any of the diseases of the inhabitants of New England, or on any kindred subject; all essays to be handed in on or before March 1, 1888. Only three essays were received, and no one of them was deemed worthy of a prize.[1]

From this experience, and from the experience of members serving on other committees for awarding prizes, the committee unanimously voted to submit the following resolutions to the Councillors:

Resolved, That the Committee on Publications be instructed to provide for a lecture, to be called the Shattuck Lecture, on some subject in accordance with what is specified in the will of the late Dr. Shattuck, the lecture to be delivered at the annual meeting of the Society, the honorarum for it and the publication of it to be defrayed from the income of the Shattuck fund.

Resolved, That the income of the Shattuck fund not required for the expenses of the lectureship shall be used for the printing of the Medical Communications of the Society.

It was voted that the report of the committee be accepted, and that the appended resolutions be adopted.

It was also voted that the committee be not restricted to members of the Society, but have full powers to select such lecturers as they see fit.

Reports were received from the Committee on By-Laws of the District Societies, and from the librarian, DR. E. H. BRIGHAM.

The following communication in behalf of the Committee of Arrangements was received from DR. J. B. SWIFT:

[1] The writer of either of these essays can have his paper returned to him by applying to Dr. G. C. Shattuck, 6 Newbury St., Boston, and giving the motto attached thereto.

"Your Committee of Arrangements has met with considerable difficulty in providing for the social entertainment of the Fellows of the Society at the annual meeting this year, and have been compelled to dispense with the annual dinner.

"The reason for this action was caused by their inability to procure a hall large enough to accommodate the Society; Winslow's Skating Rink, in which the annual dinner has been served for several years, having been taken by the City of Boston for an armory, could not be obtained, and the only remaining hall where a caterer would consent to serve dinner to so large a number is in the Mechanics' Building on Huntington Avenue. The committee, however, did not feel warranted in assuming the expense which would be necessary for this.

"After considerable discussion it was decided to hold a reception at the Hotel Vendome, hoping that by this means a suitable substitute would be provided for the dinner, and that the social element of the meeting would be given more prominence than has been possible in former years where so large a number sat down at the tables.

"Should the Society continue to grow, and the number of members attending the annual meeting increase at the present rate, some other arrangement will soon be necessary in order to accommodate the increased number.

"A proposition came before the committee this year which, should you decide to have the annual meeting hereafter devoted to sectional work, might well be carried out, to wit: Have the meeting held in the Mechanics' Building, using the smaller rooms there for the meetings of the Sections, and have the exhibit take the form of a health or sanitary exibition, which would be open to the general public on the payment of an admission fee. In this way an immense amount of useful information might be disseminated, and a very interesting exhibition be made.

"The social feature of the meeting would in nowise be interfered with, for there would still remain the large hall for a dinner or reception as might seem best.

"Owing to the large number of Fellows who attend the annual meetings, and the difficulties which the committee encounter in arranging for the meeting, it was deemed advisable to bring the subject to your attention."

It was voted to refer the subject to the Committee of Arrangements for next year, with full powers.

THE NEXT ANNUAL MEETING.

It was voted that the next annual meeting of the Society be held in Boston, on the second Wednesday of June, 1889.

ELECTION OF OFFICERS.

The Committee on Nominations reported the following list of candidates for the offices of the Society for the ensuing year, and the same were elected by ballot: Dr. David W. Cheever, of Boston, President; Dr. George Jewett, of Fitchburg, Vice-President; Dr. Frank W. Draper, of Boston, Treasurer; Dr. Charles W. Swan, of Boston, Corresponding Secretary; Dr. Francis W. Goss, of Roxbury, Recording Secretary; Dr. Edwin H. Brigham, of Boston, Librarian.

Dr. Henry P. Walcott, of Cambridge, was chosen Orator, and Dr. James R. Chadwick, of Boston, Anniversary Chairman, for the next annual meeting of the Society.

APPOINTMENT OF COMMITTEES.

The President nominated and the following were appointed to constitute the Standing Committees:

Of Arrangements. — H. C. Ernst, O. K. Newell, V. Y. Bowditch, F. B. Harrington, H. L. Burrell, R. W. Lovett.

On Publications. — G. C. Shattuck, R. M. Hodges, B. E. Cotting.

On Membership and Finances. — F. Minot, B. S. Shaw, J. Stedman, E. G. Cutler, L. R. Stone.

To Procure Scientific Papers. — H. P. Walcott, C. W. Cooper, E. H. Bradford, S. B. Woodward, C. M. Green, L. Wheeler.

On Ethics and Discipline. — G. J. Townsend, G. E. Francis, A. H. Johnson, C. Howe, F. C. Shattuck.

On Medical Diplomas. — W. L. Richardson, A. H. Cowdrey, E. J. Forster.

The President introduced the President-elect, Dr. D. W. Cheever, who made a fitting response.

At 8.30 P. M. the Council adjourned.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON PÆDIATRICS.

STATED MEETING, May 23, 1888.

PROF. V. C. VAUGHAN, of the University of Michigan, Ann Arbor, read a paper on

EXPERIMENTAL STUDIES ON SOME POINTS CONCERNING THE CAUSATION AND TREATMENT OF THE SUMMER DIARRHŒA OF INFANTS.

The subject of summer diarrhœa, he said, he had studied rather from the standpoint of the chemist and physiologist, than from that of the practitioner, and without attempting any exhaustive consideration of it, he would express the views which his investigations had led him to adopt in a series of propositions.

The first proposition was, that the factor most frequently operative in summer diarrhœa is found in the food of the infant. Heat operated in two ways: In the first place, a certain degree of heat was required for the preparation of food before it is taken into the body; this facilitating marked and rapid changes subsequently. In the second place it depressed the nerve-centres, so that the tissues lost their tone, and the normal power of resistance to toxic influences was impaired.

The second proposition was, that the changes in the food which prove harmful are fermentative in character, or, in other words, due to the presence of micro-organisms. It was a universally accepted fact that infants nursed at the breast were very much less liable to summer diarrhœa than those fed upon the bottle. In examining the reasons for this, it was found that there were certain differences in the chemical composition of mother's and cow's milk; but this was not the most potent cause. It had been ascertained that milk taken directly from the healthy animal, whether the human being or the cow, contained no germs whatever, while after it had been allowed to stand for any length of time it invariably contained germs. Thus, he had found that milk taken fresh from the cow could be preserved indefinitely in a sterilized tube, while good market milk, purchased from a reliable dairyman, soon underwent coagulation when kept in the same way.

But if this was the case, why was it that infants nursed at the breast ever had cholera infantum or other diarrhœal disease at all? This might be explained in several ways. In the first place, while a healthy woman's milk contains no germs, an unhealthy one's does; so that if the mother was not in a sound condition, her milk might be affected in the same way

as cow's milk after standing for a greater or less period of time. There were, in addition, many other ways in which germs might find their way into the infant's system; as, for instance, from the breast of a woman who was not cleanly in her habits or who was suffering from sore nipples or diseased breast. Again, few of the articles which infants in tenement houses were liable to come in contact with, were free from germs, and dirty floors were a common source of infection. Lastly, there was always the possibility that harmful germs might be inhaled from the air.

It was true, however, that when germs were contained in the food they were taken into the system in greater quantities than in any other way, and it was remarkable how quickly a few germs would render a large quantity of milk unfit for use. Thus, if half an ounce of contaminated milk were introduced into a gallon of pure milk, and the whole kept in sterilized vessels at the temperature of the body, in a short time the entire quantity of milk would be contaminated and filled with germs. Dr. Vaughan said that he had never seen anything to lead him to suppose that the germs of summer diarrhœa of infants were given off by the lungs and skin. There was abundant evidence, however, that they were excreted from the intestines and kidneys; the frequency of albuminuria offering confirmatory proof of their renal excretion. It was, therefore, highly important that the discharges of such infants suffering from diarrhœa, should always be promptly disinfected. Physiological investigations, he went on to say, showed that the digestion of milk was almost entirely carried on in the small intestines, the stomach having little to do with the process; and clinical observations confirmed the truth of this.

The third proposition was that the micro-organisms which produce simple catarrhal or mucus diarrhœa, are only putrefactive in character; but those which give rise to choleriform or serous diarrhœa are more than putrefactive, being essentially pathogenic. He did not believe in the unity of the microbic agents met with in all the forms of summer diarrhœa. The choleriform disease differed from the catarrhal in its symptoms and its pathology, and there was also good ground for regarding it as differing in its etiology. The poison of choleriform diarrhœa acted directly on the nervous system, probably more particularly on the sympathetic centres; while in catarrhal diarrhœa there was merely a local irritation. A study of the bacteria met with went to show, therefore, that there was more than one affection comprehended in the general designation, summer diarrhœa of infants.

The fourth proposition was that the bacteria prove harmful by splitting up complex compounds and elaborating chemical poisons. With our present knowledge of bacteriology we expected to find the germ of each infectious disease capable of producing its characteristic ptomaines; and he was convinced that the ptomaine of cholera infantum is tyrotoxicon. While the germ producing this ptomaine had not as yet been identified, however, we know something of its characteristics. Thus, it did not act below a temperature of 60° Fahrenheit, and it was anaerobic. That the tyrotoxicon was the ptomaine of cholera infantum was rendered highly probable by the symptoms and anatomical lesions produced on animals by this agent. The following were among the reasons, then, for regarding it as the ptomaine of this disease:

(1) Tyrotoxicon results from the putrefaction of milk, and cholera infantum is almost entirely confined to milk-fed children and those subject to conditions favorable to the development of this ptomaine.

(2) Tyrotoxicon has been found in milk taken by children just before an attack of cholera infantum.

(3) The symptoms of the disease continue to increase as long as the administration of milk is kept up.

(4) The symptoms of the disease are identical with those produced in animals by tyrotoxicon.

(5) The post-mortem results are also identical.

The fifth proposition was that the most efficient preventive treatment will consist in giving attention to the preparation of food, the methods of feeding, and the sanitary surroundings of children under the age of two years. There could be no doubt of the fact that the infant digests the milk of the mother or wet-nurse better than cow's milk. It was also a fact that mother's milk contains more fat than the child can utilize. Artificially-fed infants were more likely to be overfed than those which were nursed, because in the case of the latter the supply of nourishment was limited and not so easily obtained. This overfeeding rendered the child more subject to harmful influences, and the proteids taken into the system which could not be assimulated were constantly liable to contamination by bacteria. Dr. Vaughan then went on to say that he objected to complete artificial digestion of food (1), because, if this were continued for any length of time, the digestive organs would become permanently enfeebled; and (2) because the too rapid absorption of peptones was harmful. The long-continued use of artificially-digested food was, therefore, irrational and unscientific. In order to protect children as far as possible from the danger of cholera infantum, great care was necessary in the preparation of their food, and he had elsewhere laid down certain rules for the preservation of milk which seemed to him of service towards this end. As to the need of attention to the sanitary surroundings of such subjects, it was scarcely requisite to say anything on this occasion, as all were so fully alive to its importance. The sixth proposition was that, in the curative treatment, the destruction of the bacteria which are causing the abnormal fermentation is essential. How, then, could this destruction be accomplished? One of the surest methods of destroying the life of any plant or animal was to completely withhold its food-supply. A radical change of diet, consisting of the entire withdrawal of milk, and the substitution for it of a meat diet, was, therefore, one of the most certain methods of relieving the system of these deleterious bacteria and curing the disease due to their presence. The struggle for existence was probably not without its effect even on micro-organisms. He had found that if contaminated milk was added to beef-tea or to egg-albumen, and the liquid then kept in sterilized vessels at the temperature of the body, the number of bacteria was not increased, thus showing that they could no longer produce their chemical poison, tyrotoxicon. In milk, however, these bacteria found the most favorable conditions for their development and the production of their ptomaine. In summer diarrhœa, and especially cholera infantum, the withdrawal of all milk from the child was, therefore, of the greatest importance.

In addition to this change of diet, various antiseptic agents might be employed in the treatment, and, in order to discover which were the most efficient, Dr. Vaughan had made a series of experiments for the

purpose of testing the action of different germicides or supposed germicides on tyrotoxicon; the drug under experiment being introduced into a bottle containing milk and the poisonous ferment. In this way he ascertained that one part of bichloride of mercury to 2,400 parts of water was efficient in neutralizing the poison. One part of naphthaline to 200 of water was wholly without effect, while one part of sodium salicylate to 200 of water was efficient. It seemed probable in the latter case that the constituents of the salt became separated, and that salicylic acid was, in reality, the active agent. Resorcin in the proportion of one part to 200 of water was, likewise, efficient, but it was inefficient when used in a weaker solution than this.

DR. W. D. BOOKER, of the Johns Hopkins University, Baltimore, read a paper on

A STUDY OF THE MICRO-ORGANISMS IN THE STOMACH AND INTESTINES IN THE SUMMER DIARRHŒA OF INFANTS.

He said that it had been found that in the fæces of all milk-fed infants in health there were constantly present, and in large numbers, two species of bacteria; namely, the *bacterium lactis arogenes* and the *bacterium coli commune*. They were designated as the obligatory milk fæces bacteria, as distinguished from the inconstant bacteria which were found under various circumstances. These were ærobic for the most part, and, as a rule, were somewhat more numerous in the fæces of infants fed on cow's milk than in the fæces of sucklings.

When diarrhœal disease was present, a number of new species of bacteria appeared in the stools, and in a paper which he had read before the Section of Diseases of Children of the Ninth International Medical Congress, Dr. Booker said he had described eighteen varieties which he had observed in the fæces of seventeen children, some of whom were suffering from cholera infantum, some from dysentery, and some from catarrhal diarrhœa, while one was in good health. During the past winter he had investigated the fæces of two additional cases of catarrhal diarrhœa, and he had now to state that he had separated no less than twenty-three varieties of bacteria from the dejecta of nineteen children suffering, with one exception, from diarrhœal disease. Many of the varieties, however, bore a close resemblance to each other, both morphologically and biologically. The fæces of two of the children who had cholera infantum each contained eight varieties.

Having described the microscopical changes and the changes in color produced by the introduction of the various bacteria into pure milk and milk mixed with small and large quantities of bile, Dr. Booker stated that none of the varieties produced diarrhœa in animals, whether introduced into the system by the mouth or rectum, or by intra-venous injection.

DR. L. EMMETT HOLT read a paper on

MICROSCOPIC EXAMINATION OF THE STOMACH AND INTESTINES IN THE SUMMER DIARRHŒA OF INFANTS.

His observations, he said, included eighty-two cases, which he divided into three classes; namely, those in which the disease lasted four days or less; those in which it lasted from four to ten days; and those in which it lasted over ten days. The last class comprised fully one-half of the cases, and the average duration was about three weeks. He then went on to describe in detail the microscopical appearances in the three classes of cases, which were illustrated by a number of carefully prepared plates, and which went to show that the longer the disease lasted, the more profound were the pathological changes in the tissues.

In summing up the results of his researches, he said that in the first class of cases the microscopical examination was very unsatisfactory, and threw no light on the pathological nature of the disease, the appearances differing but little from the *post-mortem* changes often observed, especially in warm weather. In the second class of cases there were extensive enlargement and infiltration of the solitary follicles and sometimes of Peyer's patches, with marked degenerative changes. In the third class the lesions were still more marked, there often being deep ulcerations, and the character of the pathological changes clearly showed why it was that in protracted cases relapses were so apt to occur, and how necessary local treatment was for the cure of the intestinal ulcerations. He had not as yet made a careful study of the micro-organisms found in the inflamed intestines.

The Chairman of the Section, DR. J. LEWIS SMITH, read the report of the microscopical appearances noted by Dr. Wm. H. Welch, now of the Johns Hopkins University, Baltimore, in a case of brief duration which had occurred in his service at the New York Infant Asylum. He then gave the results of an investigation, made at his request by a well-known chemist, of the relative digestive power of the various brands of pepsin now in the market. The same chemist had also made a series of experiments, he said, for the purpose of ascertaining what effect, if any, the different germicidal agents now coming into vogue in the treatment of summer diarrhœa had on the process of digestion, and it was a point of some practical importance to know that these agents do not appear to retard digestion to any extent that would lead us to hesitate on this account to employ them.

DR. GEORGE B. FOWLER referred to the myriads of bacteria found in the intestines, and said that the pathological ferments were all organized, while the physiological ferments were all unorganized. Still, the latter were fully capable of developing active poisons as shown in the cases of xanthin, etc. He had always regarded the gastric juice as possessed of valuable antiseptic properties, so that it stood on guard, as it were, to render more or less inert such poisonous organisms as entered the system by the mouth. Many authorities also taught that the bile had an antiseptic value.

DR. A. CAILLE said that the practical outcome of the evening's discussion was about as follows: If we admit the bacterial origin of the summer diarrhœa of infants, we must admit that its principal cause is to be found in milk; and if this is acknowledged, we are forced to the conclusion that the ordinary methods of preparing and preserving milk are altogether faulty. At the February meeting of the Section on Pædiatrics he had called attention to the apparatus devised by Dr. Soxhlet, of Munich, by means of which the preparing and feeding of sterilized milk can be readily carried out in every family.

Since the February meeting a New York firm, at his suggestion, had prepared an apparatus (which they were now ready to supply in any desired quantity) similar to that of Soxhlet, consisting of a tray

holding ten feeding bottles with combination stoppers, and a pot to boil them in. These, together with extra bottles, rubber nipples, a cleaning brush, and a tin dipper for warming the milk immediately before feeding, were all packed in a box handy for transportation. In using the apparatus each bottle is filled to one-half inch of its neck with the food, properly prepared in accordance with the age and condition of the infant, and a perforated rubber stopper pressed well into the neck of the bottle. The bottles are then set in the tray, and the tray in the pot containing water up to the neck of the bottles, and the water is brought to the boiling point. After the water has boiled for ten minutes each bottle is hermetically closed by pressing a glass stopper down through the perforated rubber stopper. After the boiling has continued for ten minutes longer the tray is lifted out and set aside to cool, after which it should be kept on ice or in a cool place until all the milk has been used. Milk prepared in this way can be kept sweet and pure for any length of time required.

The apparatus, Dr. Caille went on to say, could be purchased for four dollars, but as this was probably too expensive for the poor, he would recommend that a mother who was unable to buy one should get six or eight bottles provided with the combination stopper, and boil the milk for her infant (as prepared for use) in them.

DR. A. SEIBERT said that he had no doubt that the proceedings of this evening would constitute a stepping-stone towards the attainment of a really scientific knowledge of the origin of summer diarrhœa. He was gratified to find that Professor Vaughan had arrived at the same conclusion as himself, that 60° Fahrenheit was the boundary-line beyond which the fermentation of milk commenced.

DR. J. E. WEEKS said that a year ago he had made a series of experiments in regard to the action of different agents on the pus germ. He found that salicylate of sodium was inert, while salicylic acid was actively germicidal; and he believed, therefore, that Professor Vaughan was right in concluding that in his own experiments the salts became changed, and that its germicidal value was really due to the salicylic acid that was liberated. Naphthalin he found germicidal in rather strong solutions, while bichloride of mercury stood very high. Nitrate of silver also stood high.

DR. VAUGHAN, in bringing the discussion to a close, said that in his own experiments it was probable that the lactic acid present set some of the salicylic acid free from the sodium salicylate. In Dr. Weeks's experiments, there being no such agent present, the salt would naturally remain unchanged. As to the practical use of germicides in the treatment of summer diarrhœa, the dose of the bichloride of mercury required would be about one twenty-fifth of a grain, and as this seemed rather large for young infants, it would, no doubt, be safer to give five grains of salicylate of sodium, which, according to his tests, was the dose of this agent required for the purpose desired.

DR. SMITH having inquired whether it was a fact, as supposed by some, that calomel was changed into the bichloride of mercury after being taken into the system, Dr. Vaughan replied that this was undoubtedly the case with a certain proportion of the amount taken, and it seemed probable to him that the change was especially likely to take place when the calomel was given in small doses.

Recent Literature.

Atlas of Venereal and Skin Diseases. Edited by PRINCE A. MORROW, A.M., M.D. Fasciculi I, II and III. New York: William Wood & Co., 1888.

The scheme of this work, which is to be published in fifteen parts, each part containing five plates, with accompanying text, is an excellent one; namely, the selection of plates from different atlases, their reproduction and collection in an American edition. The principal sources of supply will be the well-known and standard atlas of Kaposi and Neumann. Additional specimens are to be contributed from their collection of original drawings by other distinguished dermatologists in this country as well as abroad. The conception of the work is good, since it means selection and combination of the best, and its execution, as represented by the first three numbers, is deserving of high praise. In these numbers are shown varieties of the local venereal ulcer, and of the initial lesion of syphilis, together with some of the earlier cutaneous manifestations of the disease. The plates are taken, for the most part, from Kaposi, a few figures being supplied by Hutchinson's collection. A careful comparison of the originals, so far as Kaposi's plates are concerned, with their reproductions, shows the latter to be faithful copies, and, if anything, better lithographs. The lithographic work also in the copies of Hutchinson's figures is particularly fine. The difficulty of doing this sort of work well is great, demanding time and attention to detail, and if the standard set by the first three numbers is maintained, an excellent atlas of cutaneous and venereal disease will be the result. G. H. T.

Diseases of the Heart and Circulation in Infancy and Adolescence. By JOHN M. KEATING, M.D., etc., and WILLIAM A. EDWARDS, M.D., etc. pp. 211. Philadelphia: P. Blakiston, Son & Co.

This book is made up of a series of articles which appeared in recent numbers of the *Archives of Pædiatrics*, and are now collected. The first question which naturally presents itself to the mind of the reader is: what special peculiarities, physiological and pathological, of the circulatory apparatus do infancy and adolescence present? The answer to this question is obvious. The chief and only important difference between children and adults in this respect lies in malformation of the heart and great vessels, and the consequences which this entails. Endocarditis and pericarditis are much the same clinically and pathologically at all ages, while primary degenerative changes of the heart walls are extremely, secondary comparatively, rare in the young subject.

Of the 211 pages in the book, twenty-seven, including three of a valuable bibliography, are devoted to the fœtal circulation, congenital disease, and malformation; while thirty-two pages are given to diseases of the blood, comparatively rare in early life, and during that period in no wise peculiar. Hæmophilia is an exception. The authors lay stress on the frequency with which this remarkable proneness to hæmorrhage, with regard to the intimate nature of which we are so ignorant, is hereditary, and also on its rarity in females, but have forgotten to mention the very interesting peculiarity of hereditary transmission shared by hæmophilia with color-blindness and pseudo-hypertrophic paralysis, that while the fe-

male members of a family escape in their own persons, they transmit the constitutional vice.

As far as the chapter on congenital disease goes, it is in the main clear and accurate enough. The authorities are not unanimous as to the relative value of the two factors — inflammation and malformation — in the production of congenital cardiac disease, but there certainly seems good reason to think that fœtal endocarditis is especially apt to attack a valve which is malformed; that is, is often secondary.

The situation of the apex-beat higher and farther to the left in children than in adults, the heart being placed more transversely on account of the high stand of the diaphragm, is well brought out, and should be known by all.

The chapter on treatment strikes us as vague and unsatisfactory. The paper and print are good, but the printer has been allowed to take liberties with the names of continental writers. The photographs bound into the book do not seem to us to enhance its value. They are in marked contrast with the simple colored cut of the fœtal circulation borrowed from Cazeau's and Tarnier's obstetrics.

A Manual of Medical Jurisprudence, with special reference to Diseases and Injuries of the Nervous System. By ALLAN MCLANE HAMILTON, M.D. New York: E. B. Treat. pp. 390.

This book is the work of an author of wide experience as an alienist. He sets before his readers his views upon a series of subjects having most important medico-legal relations. Insanity, hysteria and "hysteroid" conditions, epilepsy, alcoholism, cranial and spinal injuries are discussed in a way to serve fairly the purpose announced in the preface — that the volume is "an elementary treatise and book of reference for lawyers and doctors." But the work, though interesting, seems to us to be lacking in those qualities which, if present, would give it permanent value. It is crude and unfinished. The effect of the various chapters and sections is that of patchwork. There is a want of symmetry and deliberation in the workmanship. The volume is a scrap-book rather than a treatise; its parts lack cohesion. The subjects pertinent to the scope of the author's design, as set forth in the preface and title, are not elaborated in such a way as to satisfy the discriminating reader, and matters not germane are interpolated without good reason. Many pages are devoted to malingering and feigned diseases, and a chapter is given to a discussion of the methods and post-mortem diagnosis of suicide; it is difficult to see the relation of these topics to diseases and injuries of the nervous system, or to comprehend the kinship of these latter matters to the question (page 194), "can persons be robbed while under the influence of chloroform?"

The work, too, shows considerable evidence of hasty and careless preparation. Besides the absence of proper method and arrangement in rhetorical construction, the pages are marred by numerous grammatical errors and heedless omissions, which are a serious and inexcusable blemish in a composition of this kind. The volume shows a stamp upon its cover to indicate that it is one of a series of "medical classics." The critical reader, however, will hardly fail to observe that much painstaking revision and reconstruction are required to bring the text up to a level that truly deserves the descriptive title "classical."

THE BOSTON

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ANNUAL REPORT OF THE BOSTON CITY HOSPITAL FOR 1887.

THE annual report of this Hospital shows a continued increase in the number of patients treated. The whole number under treatment in the Hospital during the year was 5,937, being 569 more than were treated during the preceding year. The largest number in the Hospital on any one day was 392, the daily average being 354. The average cost to the city for the board of each patient was $7.41 per week.

Of these patients, 790 were accidentally injured, and the severity of the accident cases is shown by the fact that 185 patients died within forty-eight hours after admission. The growth of the Hospital work is illustrated by a comparison with the accidents of the first full year of the Hospital's existence — 1865 — when the admissions for accidents were 242. In addition, 14,318 were treated in the out-patient department. The statistics show a high death-rate, $10\frac{4}{10}$ per cent. If from the total number of deaths we deduct those brought to the Hospital in a dying condition, the annual mortality is reduced to $7\frac{3}{10}$ per cent., which is still high enough to provoke inquiry. The greatest mortality was due to diphtheria. According to the tables, there were on the medical side of the Hospital 105 cases of diphtheria, with 31 deaths; and on the surgical side 77 cases, with 57 deaths, a grand total of 81 deaths from that dread disease. The ratio of deaths to cases admitted is probably greater even than these figures show, as cases are occasionally admitted to the medical side and afterwards transferred to the surgical department for tracheotomy, and in such cases would be likely to figure twice among admissions and but once among deaths. These cases of diphtheria are undoubtedly the worst that the city affords, many of them being admitted simply because the hospital gives them a "last chance," and occasionally we believe a case is very properly forced into the hospital by the Board of Health, for the safety of its neighbors.

Where active interference has been necessary, tracheotomy and intubation have been the resort about an equal number of times. Intubation was done 30 times, with 22 deaths; tracheotomy was done for diphtheria 37 times, with 30 deaths, showing a little more favorably for intubation, but the figures are too small to give any reliable comparisons.

Phthisis pulmonum is credited with 55 deaths. These were probably hopeless, or nearly so on admission, many of them being admitted with a view simply to soothing their last days.

There were 256 cases of typhoid fever, and 43 deaths. During the last season the summer tent service was enlarged by additional tents, and medical cases, especially typhoid fever, were treated in them, but no exact data exist to show whether such cases did better than in the wards.

The tables of surgical operations have recorded against many of the deaths a word of explanation giving some facts as to the cause, and the absence of septicæmia and pyæmia is quite striking. The table of surgical diseases shows that a few such cases were admitted but as a sequence of operations the disease was practically unknown during the year.

The Hospital has added to its capacity by two new buildings for contagious diseases, which were not opened at the time the report was written. The two buildings are practically alike, differing only in a few details. They occupy space formerly vacant, on the medical side. Each building is 138 feet long by 42 feet wide, is one-storied in centre for 75 feet; the end portions (31 feet each) having two stories. In planning these buildings for the special use of contagious cases, it was intended to so arrange the wards that in each building there might be accommodations for each sex in open wards, and also in isolating or private rooms. Any satisfactory plan to meet this requirement involved a radical change in arrangement from any in the buildings now erected.

The buildings are entered on the main floor by three doors upon the side, instead of by one end door, as in the other one-story buildings. Each building may be said to be divided into five sections: the centre section contains the service or duty rooms; on either side is an open ward, 25 feet by 35 feet, intended one for either sex, and accommodating eight adult patients or ten children. At each end is a group of three isolating rooms on the ground floor.

At either end of each building in the second story is a small group of rooms, 42 feet by 31 feet, accessible by stairway, and so arranged as to be used as an annex to the ward, or they may be shut off from the ward, and be entered by an outer door leading to the lateral corridor. The arrangement is such that it may be used for private patients, to give increased accommodations in time of epidemics for convalescent patients from the main ward, or for cases of mixed contagious diseases. This group consists of three rooms, capable of accommodating six patients, having serving, toilet, and bath rooms, and the complete outfit of a small isolating ward. These contagious wards were greatly needed.

The Trustees express the hope that the Hospital may be at some time in the near future endowed by the city with a much needed convalescent home.

The list of bequests to the Hospital shows that the last bequest was dated 1875.

HISTORY OF A MEDICAMENT.

UNDER this title, Jules Cyr, in a recent spirited and humorous publication ("*Scènes de la Vie Médicale*") takes off one of the medical fashions of the times. Many old medicines have gone out of use and the confidence in others is shaken, but while in some quarters the materia medica is undergoing (as it deserves) a careful weeding, in others there is a rage for therapeutic novelties which often redounds more to the profit of the pharmacist (who knows how to turn to the best account the fleeting reputation of a new drug), than to that of the physician or his clientèle.

Ganivet and Lapozème had been fellow-students at the Ecole de Médecine. Both were located in the metropolis; the one was hospital externe, the other, interne in pharmacy; both were ambitious and impecunious. Ganivet had no notion of seeking for fortune and influence by patient waiting, or by the ordinary routine of dull toil; he aimed to find a "specialty" that would at once bring him fame and fortune. A happy inspiration seized him; he would discover a new medicament, have it duly tested physiologically and clinically, get the medical journals to trumpet it and thereby create a demand, patent it and thereby enjoy the monopoly of a lucrative and useful product, and the consciousness of having done something to lessen the sum of human ills. Where was he to look for the new pharmaceutical agent that was to so interest and arouse the medical profession in the old world and the new? Naturally in the "aromatic series" that "mine of specialties" from which so many new antiseptics and antipyretics had been derived, and which was doubtless yet far from being exhausted. His friend Lapozème, the chemist, could here render him valuable service. To him he communicated his plan. By a subtle combination of analytical and synthetical processes, all belonging to the domain of the laboratory, the new pharmaceutical wonder was to be teased out of the arcana of nature. There must be some physiological experiments by gentlemen holding an official position, to test its properties. Then would come the usual "notes" to the Society of Biology, "notes" to the Institute, experiments on hospital patients, experiments in private practice. Liberal trial samples would be sent to medical celebrities in different parts of the country, with printed circulars, containing the endorsement of the renowned clinical chief of the great Hôpital des Malades, etc.

To shorten the story, the "mine" of the aromatic series was "explored" with diligence, and by the skil-

ful combination of several rather complex organic radicals, the sought-for product was obtained. Ganivet, by a little clever wire pulling, got the appointment of deputy preparator to the Laboratory of New Medicaments, where he had at his disposal a sufficient number of dogs, hares, guinea-pigs, and frogs for experimentation. The new drug was duly tested and found to have a marked action on the heart, in small doses increasing the vital properties of that organ; in large doses tetanizing it. It therefore received the appropriate name *Cardiosthenine*. "Notes" and "Communications" were at once sent to the learned societies. In the opinion of those who had experimented with the new chemical agent, it was far superior to digitalis, which it must eventually replace in the practice of progressive physicians.

Cardiosthenine was received with favor, and even with enthusiasm and furor, by the medical profession. The wary proprietors, who were careful to protect their own interests by patenting the name, were able without much difficulty to obtain the requisite clinical experimentation and a goodly number of emphatic testimonials. The celebrated Dr. Simon Levi, clinical chief of the Hôpital des Malades, who had had the honor of attending the late General B—— in his last illness, gave the weight of his influence in favor of the new medicament. He caused it to be thoroughly tested in five thousand cases, and with uniformly favorable results: elaborate reports of these trials were published under his own name, or embodied in theses by his pupils. Communications by other authorities were presented to the "Institute" and "Academy," and these were reproduced by all great medical journals, at home and abroad. In short, as has been the case with many other new medicaments whose *début* has been suitably trumpeted, *the results noted were always favorable at first.* It is needless to say that the demand for their product more than satisfied the most sanguine expectations of the proprietors, the sales being for some time unprecedented, and the profits accruing therefrom (all competition being rigidly excluded) being necessarily liberal.

To be sure, the ultimate results, it must be confessed, were somewhat disappointing, as the proprietors found after they had exploited their "cardiosthenine" for all that it was worth; and another melancholy fact was added to that long chapter of human history which tells how easily the best of men are sometimes imposed upon.

EXPERIMENTAL RESEARCHES RELATIVE TO THE ACTION OF MEDICAMENTS ON THE BILIARY SECRETION, AND THE ELIMINATION BY THIS SECRETION.

DRS. PREVOST and Binet have communicated a note to the Academy of Sciences relative to the cholagogue action of medicaments, and their elimination by the bile. These experiments were made on two dogs on which they had produced a biliary fistulæ, and which were kept several months under observation. The following is a resumé of their studies:

(1) "In confirmation of the experiments of Röhmann, our animals with the biliary fistulæ have been kept in good health by excluding from their food fats which pass out almost in their entirety in the stools, where their presence is easily detected.

(2) "The quantity of bile augments somewhat with food, especially after the ingestion of peptones. Fats, on the other hand, do not produce any augmentation in the flow of bile. Cold or warm water only produce slight increase in quantities of 150 cc. to 200 cc. Copious lavements of cold water, recently recommended in jaundice, do not modify the biliary secretion.

(3) "As for the elimination by the bile of medicaments introduced into the organism; this is always inconsiderable.

(4) "There is no constant relation between the elimination of a substance by the bile and the effect which it may have in increasing the biliary secretion."

MEDICAL NOTES.

— The thirty-seventh meeting of the American Association for the Advancement of Science will be held at Cleveland, Ohio, from Wednesday morning, August 15, until Tuesday evening, August 21, 1888.

— Dr. Squibb gives the following list of the antipyretic drugs in common use, with the price per ounce, and the statement as to whether or not it is patented

Sulphate of quinine (best makers) about	$0 40
Tartrate of chinoline	70
Resorcin	30
Salicylic acid, patented	20
Kairin, patented	2 00
Antipyrine, patented	1 25
Sulphate of thallin, patented	1 75
Antifebrin, 30c. per oz., or as acetanilide	15
Salol, patented	40

— A writer in the *Indian Medical Gazette*, of Calcutta, is publishing a medical history of our War of the Rebellion, in which occurs the following: "With reference to the disease called 'cholera morbus,' of which 26,347 cases, with only 305 deaths, are said to have occurred, it is doubtful whether they would not have been more appropriately placed under some other head of disease. I find numerous non-fatal cases of 'cholera morbus' recorded in the returns from the commencement of the war some years before the fourth 'invasion' of the disease occurred in America. It is hardly credible that the disease known to us as cholera would have occasioned so few deaths in so many cases."

— The son of a prominent citizen of Dublin consulted an eminent throat specialist for an affection of the larynx. A tumor was discovered, and portions excised for microscopic examination, the physician meantime assuring the patient that appearances pointed to the growth being entirely benign. But the patient had become so thoroughly demoralized by reading the newspaper literature of the late German Emperor's

case and by other quasi-medical reading, that he committed suicide in a fit of depression. Another instance of the possible ill effects of scattering detailed bulletins of the illness of the great, where ill-balanced minds cannot avoid seeing them.

— Recent explorations at the Island, of Cos have as we learn from the *Medical News*, unearthed the site of the renowned temple of Æsculapius, the third in prominence in the mind of the Greek world. The only ones that were held in higher esteem were the temples at Epidauros and Athens. An altar has been found, and a marble serpent, the well-known attribute of the god of medicine. The description that Strabo gives of the temple at Cos would indicate the possibility of a rich harvest if systematic excavations are carried on at this site. He says that its shrines were full of votive offerings, including priceless works of art, and its walls abounded in inscriptions recording the cures wrought there, which Hippocrates is said to have studied, and from which he learned much of his medical lore. The excavations at the Asclepeion of Athens have yielded valuable results, but much remains to be learned concerning the cult and ritual of Greek medicine, which can be discovered only by the bright spade of the scholarly explorer.

— The *Medical News* chronicles the intended erection by the Jefferson County (N. Y.) Historical Society of a monument to the discoverer of chloroform, Dr. Samuel Guthrie. Dr. Guthrie was born in 1782, his father having been a physician of Brimfield, Mass.; he died in 1848. During the War of 1812 he was examining surgeon, and did chemical work for the military posts in northern New York. In 1817 he took up his residence at Sackett's Harbor. He published in *Silliman's Journal* for October, 1831, an article describing the preparation and properties of a "Spirituous Solution of Chloric Ether." The ether was made by distilling chloride of lime with alcohol. His paper was in the hands of the publisher as early as May 8, 1831, and was completed some months before that date. These data conclusively establish the priority of the American discovery of the world's great anæsthetic, since Liebig had not published his account until November, 1831, and Soubeiran's did not appear until January, 1832. The race between these three independent discoverers is a close one, but to Guthrie our contemporary awards the honor of first making and describing the substance which we now know as chloroform — a name originated by Dumas in 1835. It is a curious fact that Guthrie, during forty years of his life, devoted much time and thought to the improvement of gunpowder, and it is quite possible that both that destructive compound and the anæsthetic that was to be, were in hand at one and the same time.

BOSTON AND VICINITY.

— By a will lately made the Boston Medical Library Association will receive a bequest of $10,000 at some future time.

— Mrs. Sarah Jane Robinson, the Somerville, Mass. poisoner, has, after the rejection of her motion for a new trial, been sentenced to be hanged in November next.

NEW YORK.

— On the 28th of June, Mr. D. O. Mills formally transferred to the city the new training school for male nurses which he has erected at his own expense in the grounds of Bellevue Hospital. The building, which is of Carlisle stone and red brick, with terra cotta trimmings, is in the form of an L, five stories and a basement in height, and has a frontage of 75 feet on Twenty-sixth Street, and 80 feet on the East River. The two upper floors are to be devoted to the hospital museum. On the occasion referred to the principal address was delivered by the Hon. Chauncy M. Depew, and at its conclusion he read a letter from Mr. Mills to Mayor Hewitt, making over the building and its appliances to the ownership of the city, in which the donor said: "In the great development of means for caring for the helpless sick which marks the present century no want has been more felt than that for trained nurses. . . . The Training School for Female Nurses was a great gain. Personal observation of the good it had done led me to think that an equal service might be rendered by an institution for the training of male nurses. The humane work of the physicians in charge of Bellevue and other city hospitals could thus be efficiently supplemented, and the sufferings of the poor under their care alleviated, while the community would gladly employ all the male nurses the hospitals can spare, and so enable the students thus trained to make the vocation of nursing their life-work." The total cost of the building as completely equipped and furnished by Mr. Mills was about $100,000.

Miscellany.

CONTINUED AND REMITTENT FEVERS.

The following circular has been issued from the office of Supervising Surgeon-General, Marine Hospital Service:

To Medical Officers and Acting Assistant Surgeons: With a view of formulating a more precise symptomatology of the "continued" and "remittent" fevers; from and after July 1, 1888, you are directed to take full and accurate notes of all cases of "continued and "remittent" fevers treated by you among patients of the Marine-Hospital Service, and to make special semi-annual reports of all such cases to this office.

The cases of fever should be classified, as far as practicable, according to the symptoms in each case, into simple continued, enteric, remittent, etc., and every symptom noted.

The presence or absence of the following symptoms relative to enteric fever should be carefully noted, together with the dates of their respective appearance: eruptions; diarrhœa; tympanites; intestinal hæmorrhage; perforation of intestines; peritonitis; necropsy; temperature range; enlargement of spleen; delirium (character); mode of onset (gradual or sudden,) presence or absence of initial chill; presence or absence of intestinal lesions, and if present, give exact location.

CASCARA SAGRADA IN RHEUMATISM.

H. T. GOODWIN, M.D., Assistant Surgeon, United States Marine Hospital Service, writes as follows in the *New York Medical Journal*, under date of June 9, 1888.

The effect of cascara sagrada in rheumatism I discovered by accident. About three months ago, I was attacked with severe rheumatic pains in my shoulder, the slightest motion causing intense pain. The third day of the attack, I commenced taking as a laxative ten drops of the cascara, t. i. d. The first morning after taking it the pains were so much less severe that I could move my arm freely. The day following I was entirely free of all discomfort.

Although, as I have intimated, I had not taken the cascara with any idea of relieving the rheumatism, it occurred to me a few days later that possibly the sudden subsidence of pain might have been due to the drug. There being a few cases of rheumatism in the wards, I determined to try to verify my suspicions. Discontinuing the salicylates, iodides, etc., which these patients were taking, I substituted ext. carcaræ sagradæ fl., i. c. c., t. i. d. The result astouished me. Within twenty-four hours there was marked improvement in every case. One case is especially worthy of notice: The patient was a Swedish sailor, who had been admitted three months previously. He suffered intensely, and although almost everything had been given from which relief might be expected, his suffering was not allayed. For a day or two after admission he improved on large doses of salicylate of sodium, but subsequently the pains returned as badly as ever, and the salicylate had no further beneficial effect. Iodide of potassium was given several different times, but, owing to an idiosyncrasy, could be continued only two days at a time, a profuse rash making its appearance over the patient's entire body, the pains remaining as acute as ever. They were not confined to any two or three joints, but felt in all, being more severe, however, in the wrists, finger-joints, and ankles, all of which sometimes became œdematous. On the evening of February 5th, I commenced the exhibition of fifteen-drop doses of cascara sagrada three times daily. The following morning he was about the same; the second day he was much better; on the seventh he was so far recovered that he asked and obtained permission to walk out. From this on he continued to improve steadily, and on the 17th of February was discharged, recovered.

I have since used the cascara in fully thirty cases, some ten of which were in out-patients, and, with the exception of three or four in which there was a syphilitic taint, I have obtained the most satisfactory results. I commenced with 1 c. c., t. i. d., and have never had to increase it beyond 1.5 c. c., and even to this extent in but two cases. I have seldom had to wait beyond twenty-four hours for beneficial effects. In two cases I had to stop it temporarily, owing to its opening the bowels too freely. In such cases I would suggest that one of the preparations of iron be given (separately) at the same time. I usually combine it with syrup of glycerine in equal parts, and instruct the patient to take from thirty to forty drops in water. In one case in which neither it or the salicylate of sodium appeared to give much benefit, I combined the two with good effect.

It is but seldom the bowels are opened too freely by it, the cases above referred to being the only ones I have so far observed.

I am not able to explain the action of the drug in relieving rheumatism; I leave that to other observers. I write this in the hope of inducing other medical men to use the cascara, report their experience, and indicate, more particularly, in what class of cases they have found it of most benefit.

EARLY RUPTURE OF A TUBAL GESTATION SAC: OPERATION.

An interesting case is described by Dr. J. Zucker, of Berlin (*Centralblatt fur Gynäk*, No. 15, 1888, and *London Medical Recorder*, May 21, 1888). Dr. Zucker was called in on February 17, 1888, to an indigent woman, aged 32. She was suffering from severe pains in the loins and hypogastrium. She had borne two children, and had had one miscarriage; but the date of her last confinement was not stated. The last period was "in December or in January." On February 12th severe abdominal pains set in and lasted for two hours, passing off after purgation by drugs. The patient resumed work, but the pains returned on the 17th. The pulse was weak, the tongue dry. The abdominal walls were very tense, but an indistinctly circumscribed soft mass could be felt to the left of the cervix. The parts were very tender. Symptoms of severe intraperitoneal hæmorrhage set in during the night, and much time was lost in transferring her to Dr. Veit's wards. At 2 P. M. on February 18th Dr. Veit operated. The patient was pulseless and slightly delirious. Even under chloroform no circumscribed tumor could be felt. On opening the peritoneum blood spurted out freely. Nearly four litres of fluid blood had to be rapidly cleared away. The left appendages were carefully explored but found normal, and the right fimbriæ floated freely in the peritoneal cavity. On prolonged scrutiny the bleeding was at last found to proceed from a rent, two inches long and three-fifths of an inch wide, at the junction of the inner and middle third of the right tube. Fortunately, in clearing away the mass of clots around the rent, an entire minute ovum was discovered. The tube was speedily ligatured on each side of the rent, and the pedicle encircled by a transfixing suture (*rings umnäht*). The abdominal wound was then closed, and about a litre of bloody fluid was left in the peritoneum, the operator hoping that it would be absorbed. A compress was applied to the abdomen, the patient rallied for awhile, but died rather suddenly twenty-one hours after the operation. The ovum was found to be p rfectly fresh, and could not have exceeded the third week of its development. The tubal sac was "at the most" not larger than a hazel-nut. No disease of the adjacent tubal mucous membrane could be found, The very early rupture and the profuse hæmorrhage from so small a rent were remarkable features in this case. Dr. Veit has operated in ten cases of tubal pregnancy. In three rupture had taken place, only one of these recovered; all the seven cases uncomplicated by rupture recovered. That abdominal section should be undertaken as speedily as possible when acute symptoms of intraperitoneal hæmorrhage occur after a distinct history of sudden cessation of the catamenia for two or more months, there can be little doubt.

Correspondence.

POSTURAL TREATMENT OF CONSTIPATION.

PAWTUCKET, R. I., June 30, 1888.

MR. EDITOR, — The essayist on "Postural Treatment of Constipation" did not, I think, exhaust his theme. The seat of the water-closet should be low, and made to fit the parts anatomically. Through a board of proper thickness make a circular aperture of suitable dimensions, and then thin down laterally for some two inches, and scarf off on the under side, in front and rear, leaving the hole, when seen in profile, circular. That plan of a seat is comfortable, and it will give all the advantages of the "squat." In regard to a woman in travail, more than thirty years ago an "obstetrical chair" was offered in this market, which had all the aids to expedite labor claimed for the device brought to notice at the late medical meeting of the Massachusetts Medical Society. No one piece of carpentery is more awkwardly done than making water-closet seats. Why, within a short time, in a first-class house in Providence, the aperture I noticed is like the section of a goose-egg, and it must be very uncomfortable to defecate sitting upon it.

Yours truly,

J. O. WHITNEY, M. D.

— The Board of Health of New South Wales has reported adversely upon the proposition to rid Australia of its pest of rabbits by the introduction of the fowl-cholera, according to the proposition of M. Pasteur. They fear that the remedy might "get away" from them, and, like a prairie fire, prove to be entirely beyond the control of its originators. As far as concerns such remedies, they prefer to bear the ills they have than fly to others that they know not of.

REPORTED MORTALITY FOR THE WEEK ENDING JUNE 23, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	801	389	30.55	11.70	13.26	6.63	4.29
Philadelphia	1,016,758	389	156	17.16	13.52	7.80	2.60	.26
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	338	—	19.14	10.44	6.09	5.80	.87
St. Louis	449,160	222	122	39.35	9.90	28.35	2.70	—
Baltimore	437,155	195	104	30.09	26.01	24.48	1.02	—
Boston	407,024	164	50	8.54	18.81	.61	4.27	—
New Orleans	246,000	135	53	29.60	11.10	21.46	—	—
Cincinnati	325,000	178	—	19.04	8.40	14.00	1.12	.56
Washington	225,000	144	86	37.95	5.52	26.22	2.07	—
Pittsburgh	210,000	166	100	33.00	6.60	30.00	.60	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	26	15	46.20	7.70	30.00	—	—
Charleston	60,145	48	25	16.84	8.32	14.56	—	—
Portland	40,000	10	3	—	10.00	—	—	—
Worcester	76,328	24	8	12.48	12.48	4.16	8.32	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	16	6	12.50	12.50	6.25	6.25	—
Fall River	61,203	—	—	—	—	—	—	—
Lynn	51,467	10	0	20.00	10.00	10.00	10.00	—
Lawrence	40,175	10	7	20.00	10.00	—	—	—
Springfield	39,952	14	3	14.28	14.28	—	14.28	—
New Bedford	36,298	16	3	6.25	18.75	—	6.25	—
Somerville	33,307	8	2	12.50	25.00	—	12.50	—
Holyoke	32,887	14	2	28.56	7.14	14.28	7.14	—
Salem	28,781	6	0	—	16.66	—	—	—
Chelsea	27,552	12	3	—	8.33	—	—	—
Haverhill	24,979	10	1	—	20.00	—	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	7	3	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	2	1	—	—	—	—	—
Malden	18,932	6	1	—	16.66	—	—	—
Fitchburg	17,534	4	1	—	—	—	—	—
Waltham	16,651	4	2	—	25.00	—	—	—
Newburyport	13,839	9	1	—	33.33	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2,998: under five years of age 1,154; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) — consumption 321, acute lung diseases 238, diarrhœal diseases 427, diphtheria and croup 112, scarlet fever 38, measles 34, typhoid fever 28, whooping-cough 25, malarial fever 24, cerebro-spinal meningitis 20, erysipelas five, puerperal fever five, small-pox two. From measles, New York 25, Chicago, St. Louis, and Washington two each, Baltimore, New Orleans and Lawrence one each. From typhoid fever, Chicago five, Cincinnati four, St. Louis, Boston and New Orleans three each, Baltimore and Washington two each, Pittsburgh, Nashville and Lawrence one each. From whooping-cough, New York 10, Chicago five, Washington four, Boston three, Baltimore, Cincinnati, and Pittsburgh one each. From malarial fever, New Orleans seven, St. Louis six, Baltimore four, New York three, Washington two, Nashville and Charleston one each. From cerebro-spinal meningitis, Chicago five, New York and Washington four each, Pittsburgh and Nashville two each, St. Louis, Cincinnati and Holyoke one each. From erysipelas, New York three, Chicago and Baltimore one each. From puerperal fever, Chicago four, St. Louis one. From small-pox, New York and St. Louis one each.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending June 9th, the death-rate was 16.2. Deaths reported 2,915: iniants under one year of age 648; acute diseases of the respiratory organs (London) 185, whooping-cough 81, diarrhœa 42, measles 10, scarlet fever 36, diphtheria 31, fevers 24, small-pox (Sheffield six, Preston four, Bristol one) 11

The death-rates ranged from 12.5 in Birkenhead to 25.0 in Manchester: Birmingham 19.5; Bradford 14.3; Brighton 15 7; Hull 14.7; Leeds 15.5; Leicester 16.4; Liverpool 14.8; London 14.9; Newcastle-on-Tyne 12.8; Nottingham 12.9; Portsmouth 15.0; Sheffield 18.0; Sunderland 18.2.

In Edinburgh 17.7; Glasgow 20.9; Dublin 21.7.

The meteorological record for the week ending June 23, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, June 23, 1888.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, ...17	29.89	71.0	75.0	65.0	70.0	66.0	70.0	69.0	N.E.	S.E.	S.W.	4	9	8	C.	C.	C.		
Monday, ..18	29.81	78.0	89.0	64.0	63.0	49.0	63.0	58.0	W.	W.	N.	12	8	10	C.	O.	C.		
Tuesday, .19	29.98	68.0	75.0	64.0	57.0	45.0	66.0	56.0	N.F.	S.E.	S.W.	15	6	12	O.	F.	O.		
Wednes, ...20	29.89	65.0	71.0	61.0	67.0	81.0	76.0	75.0	W.	N.	E.	12	5	8	O.	O.	O.	3	.07
Thursday, 21	29.91	59.0	63.0	56.0	86.0	89.0	92.0	89.0	S.E.	E.	S.E.	6	6	1	O.	O.	F.	2	.01
Friday, ...22	29.79	76.0	88.0	55.0	89.0	64.0	85.0	79.0	S.E.	S.W.	S.W.	1	14	9	G.	O.	F.		
Saturday, 23	29.67	85.0	96.0	69.0	72.0	45.0	80.0	66.0	W.	W.	W.	12	16	10	C.	C.	O.	3	.21
Mean, the Week.	29.84	72.0	79.0	62.				70.0										5	.29

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 22, 1888, TO JUNE 29, 1888.

McPARLIN, T. A., colonel and surgeon, U. S. Army. Granted leave of absence for one month with permission to apply for an extension of one month. S. O. 52, Department of the Platte, June 20, 1888.

BROWN, J. M., major and surgeon. Will take charge of the office and duties of the Medical Director, Department of the Platte, during temporary absence of Col. McParlin. S. O. 52, Department of the Platte, June 20, 1888.

OWEN, WM. R., Jr., captain and assistant surgeon. Ordered to Fort Leavenworth, Kansas, for duty. S. O. 148, A. G. O., June 27, 1888.

WOODHULL, A. A., major and surgeon. Granted leave of absence for three months to take effect about July 10, 1888. S. O. 148, A. G. O., June 27, 1888.

WOOD, MARSHALL W., captain and assistant surgeon. Ordered to Fort Randall, D. T., for duty. S. O. 147, A. G. O., June 26, 1888.

SHANNON, WM. C., captain and assistant surgeon. Ordered to Fort Meade, D. T., for duty. S. O. 147, A. G. O., June 26, 1888.

McCREERY, GEO., captain and assistant surgeon. Ordered to Fort Warren, Mass., for duty. S. O. 147, A. G. O., June 26, 1888.

So much of Paragraph 3, S. O. 142, A. G. O., June 20, 1888, as relates to Captains George H. Torney and George McCreery, assistant surgeons, is revoked. S. O. 147, A. G. O., June 26, 1888.

GANDY, CHAS. M., first lieutenant and assistant surgeon. Granted leave of absence for three months to take effect on or after July 5, 1888. S. O. 145, A. G. O., June 23, 1888.

POINDEXTER, J. D., first lieutenant and assistant surgeon. Granted leave of absence for one month. S. O. 55, Department of Dakota, June 18, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JUNE 30, 1888.

MOORE, A. M., surgeon. Ordered to Naval Station, New London.

AUSTIN, A A., passed assistant surgeon. Detached from "Gedney" and wait orders.

OWENS, THOMAS, assistant surgeon. Detached from Naval Station, New London, and to Coast Survey Steamer "Gedney."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING JUNE 30, 1888.

VANSANT, JOHN, surgeon. Granted leave of absence for ten days, June 25, 1888.

MEAD, F. W., passed assistant surgeon. Granted leave of absence for thirty days, June 28, 1888.

APPOINTMENTS.

BOSTON CITY HOSPITAL.

The trustees of the Boston City Hospital have made the following appointments: J. Orne Green, M.D., Visiting Aural Surgeon; E. D. Spear, M.D., and George A. Leland, M.D., Aural Surgeons to Out-Patients; Henry W. Kilburn, M.D., Assistant to the Ophthalmic Surgeon.

BOOKS AND PAMPHLETS RECEIVED.

Nineteenth Annual Report of the State Board of Health of Massachusetts. Boston, 1888.

Food Laws. By Henry Leffmann, M.D. Philadelphia, 1888.

Medical Publications; Harvard Medical School. 1887.

Merrow's Atlas of Venereal and Skin Diseases, No. 5. New York: William Wood & Co.

Massachusetts College of Pharmacy. Twenty-first Annual Catalogue. 1887-88.

The Relation of Alimentation and Disease. By J. H. Salisbury, A M., M.D., LL.D., Member of the Philosophical Society of Great Britain, etc. New York: J. H. Vail & Co. 1888.

Contributions to Clinical and Practical Medicine. By A. T. H. Waters, M.D., Fellow of the Royal College of Physicians of London, etc. London: J. & A. Churchill. 1887.

The Electric Illumination of the Bladder and Urethra as a Means of Diagnosis of Obscure Vesico-Urethral Diseases. By E. Harry Fenwick, F.R.C.S., etc. With thirty illustrations. London: J. & A. Churchill. 1888.

The Physician's Leisure Library, No. XI. The Disorders of Menstruation. By Edward W. Jenks, M.D. Detroit: George S. Davis. 1887.

A System of American Obstetrics. By American Authors. Edited by Barton Cooke Hirst, M.D., Associate Professor of Obstetrics in the University of Pennsylvania, etc. Volume I. Illustrated with a colored plate and 309 engravings on wood. Philadelphia: Lea Brothers & Co. 1888.

The Alcohol Habit. By L. W. Baker, M.D., Member American Association for the Cure of Inebriates; Corresponding Member Medico-Legal Society, New York, etc. Baldwinville, Mass. Reprint. St. Louis: 1888.

Stricture of the Urethra; Urethrotomy under Cocaine Anæsthesia. By Henry J. Reynolds, M.D., Professor of Dermatology in the College of Physicians and Surgeons; Professor of Skin and Genito-Urinary Diseases, Chicago Polyclinic, etc. Chicago. Reprint. 1888.

A New Way of Training Nurses. By A. Worcester, A.M., M.D., Fellow of the Massachusetts Medical Society, etc. Boston: Cupples & Hurd. 1888.

Dissolution and Evolution and the Science of Medicine: an attempt to coördinate the summary facts of pathology, and to establish the first principles of treatment. By C. Pitfield Mitchell, M.R.C.S. England, etc. London: Longmans, Green & Co. New York, 1888.

A Manual for Hospital Nurses and Others engaged in Attending on the Sick. By Edward J. Domville, L.R.C.P. London, M.R.C.S., England, etc. Sixth edition. Philadelphia: P. Blakiston, Son & Co. 1888.

The Language of Medicine: A Manual giving the Origin, Etymology, Pronounciation and Meaning of the Technical Terms found in Medical Literature. By F. R. Campbell, A.M., M.D., etc. New York: D. Appleton & Co. 1888.

Original Articles.

A CASE OF GENERAL PARALYSIS OF TEN YEARS' DURATION; DEATH FROM HEART DISEASE.[1]

BY G. F. JELLY, M.D.

FORMERLY the duration of general paralysis of the insane was stated to be from two to three years, and the average residence of cases in an insane hospital was nearer two than three years, as the hospital rarely received them till the disease was quite advanced. An earlier recognition of the symptoms has extended the average time, as has been clearly shown by Dr. C. F. Folsom in a recent paper. Much depends upon the acuteness of the observer, and much upon the surroundings of the patient and the care which he receives, nothing being so favorable as a quiet and well-regulated life, and nothing so unfavorable as excitement and confusion. Probably the average duration of the disease in the better class of patients is from four to five years. Cases of much longer duration are known to have existed, but those which have lived nine or ten years are very rare.

The following case is interesting, as showing a fair degree of intelligence after, at least, ten years' duration, through nine of which he was more or less under my observation. For portions of the history of this patient I am indebted to the records of McLean Asylum:

A. G. B. was admitted to the McLean Asylum, May 22, 1875. He was forty-five years of age, a graduate of Harvard College, and a lawyer by profession, whose chief business had been the care of estates and investment of funds for other people, in which he had shown good ability, and had been considered reliable and honest. He had made for himself a competency, and lived freely and rather luxuriously. In early life he had been a private secretary to the historian, Prescott, and was a man of literary tastes, and also well versed in the modern languages. After coming to the Asylum and being put under guardianship, it was found that he had lost much of his property through unwarranted extravagance and foolish purchases, especially through the payment of exorbitant sums of money for land adjoining his home estate, which was in the country, and that his trust accounts were in a state of chaos for a period of from one to two years previous to his commitment. Indeed, could it not have been clearly proved that he had been mentally unsound during that time, he would probably have been arrested by those whose property had suffered. His friends stated that one of his brothers died insane, and that for six years he himself was quite intemperate, but for the six years just previous to 1875 he was temperate, though fond of wine and champagne. They had recognized no disease till about ten weeks prior to his admission to the Asylum, when, while in Boston and very busy, he had some kind of an ill turn, in which he complained of severe pain in the back of his neck, and seemed dazed. He was very restless that night, and the next day was excited and forgetful of the names of his family, and able to see only one-half of an object. Two days afterwards they noticed a staggering gait, thickness of speech, tremor of the hands, and a tendency to talk continually. He improved somewhat for a week, but, finding himself unable to sign a check, became very much excited, was extravagant, talked of his great wealth, wanted everything, and, if refused, was very angry. He finally became abusive and uncontrollable, and was brought to the Asylum. When admitted, he walked with an unsteady and feeble gait, was excited, and there was considerable difficulty in articulating words. He was very angry when he found where he was (his friends had not told him), and made many threats.

May 26th, four days after admission, the record states, he is in a very chaotic state, does not remember the names of people which he has been told within ten minutes, and does not know his own room.

June 1st. Continues about the same, with slight increase of his unfavorable symptoms. Thinks that he goes to walk and sleeps in various rooms, is extravagant, and offers large sums of money for his discharge.

June 20th. There is no improvement. Is becoming filthy.

July 13th. He has had several congestive attacks from vaso-motor disturbance, one of which was very severe, confining him to his bed for several days, and rendering him utterly incoherent and oblivious of passing events. When he rallied, it was found that his memory was much more impaired than it had been.

August 6th. He is somewhat clearer mentally, and there is some physical gain. He is more quiet, though always exhilarated.

August 30th. His ideas of great wealth continue, and he still confuses persons, talks all the time when he can find an audience.

He has four children, but insists that he has six, giving names to the two extra ones, and describing their appearance. He says that he is going home to make their number an even dozen. He is now easily controlled, and his wife removed him from the Asylum a little more than three months after his admission.

He was taken at once to his home. He made search for the two imaginary children, but was soon convinced of their unreality. He gradually became more quiet, and before the end of a year his extravagant delusions concerning his wealth left him, but his exhilaration, his difficulty in articulation, the tremor of his tongue and lips, and his ataxic gait continued. Owing to the ravages he had made in his property, he lost his home, which had been one of affluence, and was reduced to comparative poverty. He moved to Cambridge a year or two after leaving the Asylum, and spent much time in the College library. His memory for past events and for what he read was comparatively good, but for the minor matters of ordinary life it was unreliable. He could, for instance, never do the marketing unless his wife wrote down for him every article needed. He passed much time in translating Italian and Spanish, I understand, with accuracy, and prepared a book of Proverbs which he had translated from the Spanish. During this whole time he became poorer and poorer, but this gave him little or no anxiety. His wife was at work, and he had enough to eat and drink, and could continue his reading and translating. All other things seemed of no importance. He was almost uniformly good-natured and tractable, recognizing in a degree his condition, but hopeful and full of schemes for the future. He was subject to periods of confusion and partial unconsciousness, after which he would be less clear for a time.

[1] Read before the Boston Society for Medical Observation, April 2, 1888.

In 1881, after living in Cambridge three years, he moved to Boston to a poorer home and greater poverty. He and his family would have actually suffered had they not been helped by richer relatives. His children were poorly clothed, his quarters were small, his wife hard at work, but he was complacent and comfortable. He still continued his translations, and some time in 1881 was asked to translate for a lawyer friend a paper relating to an Italian patent. The validity of the patent, as I understand it, turned upon the rendering of a certain word. With his usual self-confidence, he allowed himself to be put upon the witness-stand in the United States Court, bore himself well, and his opinion was sustained. For this service he received ten dollars, which he spoke of to me with great glee, and immediately made many plans to increase his wealth by similar work.

It was then over six years since he had left the Asylum, one year of which he had been very much impaired, and the other five comparatively clear and comfortable. In the early part of 1882 his mental condition became worse. He was more forgetful, less attentive to reading, and more careless in his appearance. He was more subject to periods of dulness and confusion. He now conceived an animosity to his oldest son, a quiet and well-behaved boy of sixteen, and abused him roundly. He began to drink occasionally, a small amount of liquor making him very irritable and quite drunk. He was very penitent after these indulgences, but they were often repeated.

In September, 1882, he came to me and asked to be sent to the Danvers Hospital, giving as his reasons that he was not so well as he had been, that he could not resist drinking, and that his children disturbed him. It was very evident that he was losing mental strength. He seemed to enjoy the process of being committed, especially an interview with the judge of probate, very much. He remained at Danvers two months. On his return, though he was more quiet, his memory had failed, he was often dazed, and frequently lost his way in the street. He had a good deal of difficulty in going down stairs. It was arranged, soon after his discharge from Danvers, that he should go to McLean again, and he was readmitted there November 9, 1882. The certificate of the physicians at this time was:

"He has never been well since he was first discharged. He is in a state of almost constant exhilaration, is sometimes irritable, and easily excited. There is tremor of the lips and tongue, and his gait is impaired."

He remained willingly at the Asylum, spending most of his time in reading, and as was the case while at Danvers, became more quiet under the influence of a regulated life and proper food. He was allowed a good deal of freedom, made several visits home, and was discharged much improved May 1st, after a residence of about six months. From that time till the autumn he continued quiet and comfortable, but there was a deterioration in his mental power and physical strength. He could write very little, his handwriting was sometimes almost illegible, and he read mostly works of a lighter character than formerly.

In October, 1883, he again came to me and wanted to go to the McLean as a place of refuge and quiet, realizing fully that he was losing ground. He was sufficiently clear to be admitted as a voluntary patient, and it was thought best not to go through the formality of a regular commitment. He was received October 23d. I again quote from the Asylum records: "It is thought that he has failed mentally since he was here before, as well as physically. Now he frequently asks his way to his room, and could not go about town alone. He has an idea that he can go into a law office and do clerical work, or may go into a partnership with some one." At the same time, his memory was a good deal impaired and his handwriting was tremulous, and in his letters the words were misspelled or omitted.

These periods of hospital life were always of benefit to him, and he always came away less excitable and in better physical condition.

After leaving the Asylum in December, 1883, he continued to fail mentally and physically. His gait was more enfeebled, his steps were of unequal length, his articulation worse, but he never lost his hope or his confidence in his future prospects. He became less cleanly and more irritable. He could converse intelligently and continued his reading, but in a desultory fashion. It was no longer safe to permit him to go any distance from his home alone.

While in this condition, in the spring of 1884, he suddenly died with symptoms of angina pectoris. He was not in Boston, and I did not see him at the time. The physician who was called detected valvular disease of the heart. Nothing had called my attention to his chest, and I had not examined it for a long time. He had no disease of the kidneys. He had, to my certain knowledge, suffered from general paralysis of the insane for more than ten years.

With the exception of the case of another gentleman, who is still living and in pretty good mental and physical condition, who is also suffering from general paralysis, I have never been able to follow a patient with this disease for so long a time.

The case which I have related seems to me remarkable, not only from the fact that the patient lived so long, but, also, that after a period of utter incoherence and great prostration, he rallied so far that there were four years when the disease was apparently stationary, during which he lived very much as sane and well people do, and that he preserved such a good amount of intelligence and physical strength to the end. I think there is every reason to believe that he would not have died from the effects of general paralysis for some time longer.

During all the years of my acquaintance with him the diagnosis of his disease was unmistakable, and there was no difference of opinion among all the physicians who saw him, who were accustomed to observe similar cases. There was no reason to suspect that he had ever had specific disease. The knee-jerk was always diminished, and latterly, entirely lost. The pupils were sluggish and small, but equal in size.

From the time that I first saw him there was loss of mental power, difficulty in articulation, an unsteady gait, either excitement, extravagance, or a comfortable sense of well-being, even under the most trying circumstances, and, with the exception of the four years in which there was little apparent change, his progress was steadily downwards, with occasional short improvements.

—The International Ophthalmological Congress will be held at Heidelberg, from the 9th to the 12th of August next.

ONE, POSSIBLY TWO, CASES OF GRAVES'S DISEASE.[1]

BY FRANK E. BUNDY, M.D.

I TRUST that you will pardon me if before reporting the two cases which have come under my observation I recall briefly to your minds the symptoms and somewhat of the history of a disease which, by some, has been styled Graves's disease, by others Basedow's disease, according as the writers have regarded the Englishman or the German, the first to group and call attention to these cases, and by others exophthalmic goitre.

The three cardinal symptoms of this disease are palpitation of the heart, enlarged thyroid, and protrusion of the eyeballs, and these occur usually in the order named. A fourth symptom, first pointed out by von Graefe, and regarded by some as almost an essential feature, but which, if I am not mistaken, does not occur in a majority of the cases reported, is a want of harmony between the movements of the eyelids and the eyeballs, by which, on looking downward, the eyelid, instead of following the movements of the eyeball, stops half-way, or on a line with the horizon. Associated with these is a long list of other symptoms, not all occurring in the same subject, but made up from the various cases reported, such as a small, rapid, and often weak pulse, ranging from 80 to 160, sometimes uncountable, strong pulsation of the carotids in the neck, an aneurismal thrill and a bellows-murmur in one, sometimes in both lobes of the thyroid, occasionally organic disease of the heart, tenderness over the region of the cervical sympathetic, emotional disturbances, great irritability of temper, sudden changes from excitement to depression, a mild form of mania, insomnia, loss of appetite, diarrhœa, increased body-heat, elevation of temperature, profuse perspiration, tremor of the hands, partial loss of motility, alteration in the color of the skin, cutaneous eruptions, and, in women, disturbed menstruation.

To fairly come under the head of Graves's disease, a case should show, at least, two of the cardinal symptoms, one of which should be palpitation of the heart. Cases are reported in which the exophthalmos was wanting, others with no enlargement of the thyroid, but none, so far as I know, where the heart was unaffected. One eyeball only may protrude, one lobe of the thyroid be enlarged, and these deformities may occur on the same or on opposite sides.

Of the etiology of the disease not much can be said that is satisfactory. Sex, age, a neurotic disposition and heredity are regarded as predisposing causes. Twice as many women as men have the disease.

The age at which the disease is most common is between fifteen and forty. The cases of a boy at eight and a woman at sixty are on record. In quite a number of cases a history of insanity or nervous disease has been detected in the family. The immediate cause may be some great mental emotion, or overtaxing of the brain, and one case is reported in which the disease developed rapidly, after a severe blow on the head. There seems to be a great diversity of opinion as to the seat of the lesion (if, indeed, there be a lesion) which is the cause of these symptoms.

The number of autopsies is small. Aside from the abnormal conditions found in the orbit and the thyroid gland, the cervical sympathetic and its ganglia seem to be the tissues most frequently found diseased. Dr. Hammond and others claim that it is a disease not of the sympathetic, but of the brain and medulla oblongata.

Just twenty years ago a case was reported to this Society by Dr. Knight, in which an autopsy, made by Dr. Webber, disclosed the sympathetic, with its ganglia more or less altered in appearance, and this corresponds with the results of a majority of the post-mortems made.

The prognosis should be extremely guarded. Some recover, a few are rapidly fatal, others linger on for years, to die of some intercurrent disease.

Of the treatment I shall speak later on. The list of remedies is long, varied, and even contradictory.

My first case is as follows:

On May 16, 1887, I saw at my office, Miss A. E., who called with her mother to consult me with regard to her condition. She was nineteen years old, five feet four inches tall, and weighed about one hundred and forty pounds. In complexion she was brunette, with brown hair and eyes, and was fairly well nourished. She had graduated from the high school in the town where she lived, in June, 1886, and the following September entered Bryant and Stratton's Commercial College in Boston. The school rooms were in an upper story, and reached by four flights of stairs. It was her custom to run up the first three and take the fourth leisurely. She continued in this school six weeks, and was then obliged to give up on account of what her physician called nervous prostration, a prominent symptom of which was palpitation. Later she made two unsuccessful attempts to resume her studies.

From Mrs. E. I learned the following facts. The daughter is an only child, two children having died in early childhood, one from measles, the other from scarlet fever. Both she and her husband are strong and well. Her own father and one sister died with phthisis, also her husband's mother and one sister. In neither her own family nor her husband's is there any record of insanity or nervous disease. She has never regarded A. as a strong girl, and yet never as sickly. She was always of a nervous temperament, easily excited, and subject to severe attacks of palpitation. She began to menstruate when thirteen years old. Until her present illness she had always been regular as to time and quantity of discharge, but with more or less pain. For the last eighteen months the quantity has been diminishing. She was unwell two weeks ago.

There was no perceptible change in A.'s health until some time after she began her school work in Boston. Then her mother noticed that she was becoming restless and unhappy. She could not sleep, and was losing her appetite and strength, and suffering from palpitation and rapid breathing. In December, 1886, about five months before I saw her, the swelling in the neck was detected, and four months later the prominence of the eyeballs was first noticeable. The greatest change was apparent in her disposition. From being pleasant, amiable, easy to influence, she became nervous, exceedingly irritable, hard to manage, and on the slightest provocation very lachrymose. "I know that I am very ugly, mother, but I cannot help it," was an expression she frequently used."

For several weeks she has been having diarrhœa, from three to five discharges daily, small and generally

[1] Read before the Boston Society for Medical Observation, April 5, 1888.

natural in appearance, but occasionally clay colored. Urine normal, except when excessive in quantity and pale. Sleeps badly; is very restless, constantly turning from side to side and throwing off the bed clothes. She complains at times, of great heat and sweating of different parts of the body, especially the hands.

Physical examination: the action of the heart was very rapid and its force much augmented. The impulse could be seen and felt over an increased area of the chest wall. The organ was not enlarged, nor was its rythm irregular; there were no abnormal sounds. The pulse was 140, weak, soft and difficult to count. Both lobes of the thyroid glands were equally enlarged to about an inch in diameter, were soft and yielding and over the right could be distinctly felt the aneurismal thrill, and heard with each systole of the heart the loud bellows-murmur peculiar to this condition. The size of the neck over the thyroid body was 14 inches. The eyes were large and somewhat prominent, the pupils normal; there was no defect of vision. The lids completely covered the eyeballs and the movements of the eyeballs and the eyelids were properly associated. The skin was hot and moist, the temperature was 99⅘. A tremor of the hands was quite noticeable as was also the loss of grasp power. She was unsteady on her feet, and walked as if she had just recovered from a severe sickness.

She was neither anæmic nor chlorotic. She had a severe cough, the result of a cold. She was greatly agitated by the examination and often a flood of tears was the only answer I could get to a very simple question.

I visited A. E. for the second time at her home about twenty-five miles from Boston, June, 18th, and recorded the following: She cannot walk as well as four weeks ago; prominence of the eyeballs is more noticeable; the cough is better; she takes more nourishment; the measure of the neck over the thyroid is 13½ inches, instead of 14 inches; sleeps more but is still very restless; three dejections each day, small and of better color; pulse, 150; temperature above normal.

Under date July 2d, my notes read: There is a decided improvement in general appearance; is more quiet; her mother says, "She is better in her mind." She sleeps well and has no cough; size of neck 13 inches; eyes less prominent.

July 21st. Looks better, less anxious, more cheerful and quiet; size of neck 12½ inches. Since my last visit, three weeks ago, she has lost the power of walking; cannot take a step alone. When lying in bed, she can draw her limbs up or push with them quite forcibly, but cannot lift them perpendicularly from the bed. Sensation but slightly if at all impaired; there is tenderness of the cervical sympathetic at both angles of the jaw. The color of the skin especially of the limbs is a dark brown, almost a bronze. The knee-jerk is absent in both limbs and tickling the soles of the feet elicits no response. The legs and feet are large and heavy; there is some œdema of legs.

From this date, July 21, 1887, to my last visit, February 11, 1888, I saw Miss E. on an average once in three weeks, and in December, 1887, she spent two weeks in town, when I saw her every day, and once in consultation with Dr. Webber.

There has been a slow but steady improvement in all respects except the rapidity of the heart's action. The ability to walk returned gradually. For a long time after she could walk without assistance, she could not get up from the side of the bed or a common chair without help. She now uses a high chair from which she can get to her feet unaided. At the time of my last visit I made the following entry in my note-book: Has gained flesh, eats well, sleeps quietly, ocular prominence hardly noticeable. I find that the size of the thyroid is subject to frequent change. The thrill and bellows-murmur in right lobe of the glands is less marked; pulse 140, temperature 102½, increase of temperature due to a severe cold, from which she is suffering. She is less annoyed by heat of skin and sweat; has walked to a neighbors (about thirty rods away) and back without help, She is decidedly more cheerful, hopeful and amiable; knee-jerk in both limbs preceptible and she responds quickly to the least irritation of the soles of her feet. The color of the skin and the shape of the legs has improved and the little œdema that has existed from time to time has entirely disappeared. She has menstruated twice since last May, the last time ten days ago. With regard to the treatment I would say, that almost every remedy that has been recommended in this disease has been tried faithfully or otherwise. I began with ergot and the bromides, and followed with aconite, belladonna, nux vomica, veratria, several forms of iron, wine of cocoa, and arsenic. Quinine she has taken almost constantly and for the last six months electricity by the faradic or the primary galvanic currents together with massage has been used. The battery employed was the Barrett chloride of zinc battery, one pole placed at the nape of the neck or the angle of the jaw, the other at the epigastrium. It was also applied to the spine and limbs. The strength of the current was what she could bear without great inconvenience.

As I review this case I am persuaded that there is at present no specific for this formidable disease and that benefit has been derived only from those remedies which tend to quiet the nervous system and to aid nature in restoring the general health, and that if Miss E. ever fully recovers, it will be by treatment along this line, and that it will take more than one summer. The moral treatment is as important as the medical. Confidence should be established between patient and physician, all forms of excitement banished, a proper diet, and much out-door exercise prescribed, everything done to inspire hope, and then there should be a patient waiting for the glad fruition. I presume that no one will question the genuineness of the above case.

My possible case of Graves's disease is as follows:

Mrs. Lizzie M., age forty, has been married five years; no children; has never had any uterine disease; is five feet three inches tall, and weighs about one hundred and thirty pounds; complexion fair; father living and well, at seventy years of age; mother died at thirty in childbirth. She has one brother and two sisters living and in good health. Several brothers and sisters died in infancy. One of her father's brothers died insane, and a cousin of her mother is now an inmate of an insane asylum.

Until she was twenty-four she had no sickness except the diseases incident to childhood. At that age she had a severe attack of urticaria, the result, her doctor told her, of eating "moonstruck fish," although two others, who partook more freely of the fish, escaped. For eight years after this attack she frequently noticed in the morning a patch of swollen skin, of

natural color, about the size of a half-dollar, on her forehead or face, and what seemed strange to her was that invariably on the arm, hand, leg or foot, of the opposite side was a patch of skin of the same character. This would last for a few hours and then disappear. With this exception she was well up to 1879, when she became my patient at St. Elizabeth's Hospital, first with typhoid fever, then with pneumonia.

In the fall of 1878 she was engaged in doing general housework in a large city house, and feeling well, was in the habit of going from the bottom to the top of the stairs on the run half a dozen times a day. It was at this time that she began to suffer from severe attacks of palpitation, and that her friends noticed that her eyeballs were bulging out. The ocular prominence continued to increase gradually for about four years, since which time it has remained stationary.

In the winter of 1882–83 she had an attack of erythema of both legs. In August and October, and again in March, 1887, she had attacks of erysipelas of the face.

In the early part of September, 1887, I was called, and found her recovering from what proved to have been pemphigus. It began in her face, and then appeared in the left hand, which was still red, stiff and painful. Before the left hand was well the disease broke out afresh in the right, and from that time until the last of December, nearly four months, she was a great sufferer, and was confined a greater part of the time to her bed. She has not yet fully recovered the use of her right hand, but is slowly improving in her general health. Her eyes are very prominent, so much so as to attract attention on the street. The eyelids fail to cover the eyeballs by at least the eighth of an inch. By gentle pressure the globes can be pushed back, but immediately return when the pressure is removed. There is no want of agreement between the movements of the eyelids and the eyeballs. While there are no physical signs of heart disease, she has frequent attacks of distressing palpitation.

The question, why I regard this case as one of Graves's disease may be very properly asked, and I must confess, that I did not so regard it until the case of Miss E. came under my observation. The immediate cause of the disease seems to have been the same in both cases, and in each the first symptom was palpitation. With Miss E. the other two cardinal symptoms followed in their regular order, but with Mrs. M. the enlarged thyroid was absent, an omission by no means rare. During Mrs. M.'s more recent illness from pemphigus there was a peculiar nervousness, a tremor of the hands, frequent palpitation of the heart, and an unsteady gait, which, to a greater degree, existed in the case of Miss E.

Two cases of undoubted Graves's disease, associated with urticaria, have been reported by Dr. Bulkley, of New York.

Erythema, pemphigus, and urticaria are now classed under skin diseases which may have a neurotic origin.

After preparing this paper I heard incidentally of two other cases of Graves's disease which had never been reported, and wrote to the gentlemen who had them in charge for such information as they could furnish.

The facts are not as complete as I could wish, but are, I think, of sufficient interest to warrant my giving them. Dr. Milton Jay, of Chicago, very kindly sent me what he could recall of the history in the case of Miss R., who died about eleven years ago. His notes, taken at the time, were accidentally destroyed.

She was a school teacher, twenty-four years old, of dark complexion and nervous temperament. Her father died by suicide, insane. One sister was very eccentric.

The immediate cause of the disease was great sorrow, followed by nervous prostration. The symptoms were palpitation, enlarged thyroid, marked protrusion of the eyeballs, the eyelids failing to cover them, a want of harmony between movements of eyeballs and eyelids, increased heat and high temperature, colliquative sweats, great nervous and mental irritability and diarrhœa. During the last two weeks of her life she had peritonitis and metritis, and she died with inflammation of the brain and spinal cord. No autopsy.

I am indebted to the courtesy of Dr. W. Scott Hill, of Augusta, Me., for the following facts in the case of Miss S., who came to him in 1885 as an office patient: She is twenty-nine years old, has brown hair and eyes, nervous temperament, and belongs to a family in which there is no history of insanity, but of which several members have been regarded as extremely nervous. The only known cause of the disease was insomnia, the result of hard study and the excitements incident to social life, her father being United States Consul at a foreign port.

The disease appeared in 1881. She had the best advice that could be obtained abroad, but came home in 1885 with all the principal symptoms well marked. She had palpitation, enlarged thyroid, very large and prominent eyeballs, over which the lids would not meet, and a decided want of agreement in the movements of the eyelids and eyeballs. The pulse ranged from 140 to 150, and she complained of excessive heat, a constant feeling of extreme nervous tension, great restlessness, and loss of sleep. In walking, she had an unsteady, wriggling gait. I know from another source that, as the disease developed, Miss S. experienced that remarkable change of disposition which is almost pathognomonic, and was so prominent a symptom in the case of Miss E. Dr. Hill writes that, after a year's treatment, the thyroid enlargement has entirely disappeared, except what is due to thickening of the tissues, and that his patient regards herself as perfectly well. He attributes the cure to the use of the third decimal tincture trituration of nux vomica. I know that he will pardon me if I suggest that, from my standpoint, more credit should be given to the moral treatment, which I do not doubt he enjoined, than to the much attenuated drug.

Since the meeting of the Society, at which this paper was read, Dr. Frederick W. Johnson has at my request very kindly sent me the following notes of a case in which he was professionally interested: Mrs. E. K., aged forty-seven at time of death, had been married twenty-four years; of dark complexion and nervous temperament. She had been sick ten years. So far as known no history of insanity or neurotic disease in either branch of the family. At the age of twelve she had acute articular rheumatism; never well afterwards, and suffered severely from chronic rheumatic arthritis. The cause in this case is supposed to be heart disease, the result of rheumatism.

The cardinal symptoms were present. The action of the heart was exceedingly violent and the pulse rapid, ranging from normal to 120. There was mitral regurgitation. The thyroid gradually increased

in size, for seven years, and then remained stationary. The protrusion of the eyeballs was very marked for eight years. At times, the lids failed to cover the globes. For some time before death, the lids did not follow the eyeballs on a downward glance. The patient had hysterical paralysis of the œsophagus, numbness of right hand and arm, with inability to use them. She was very irritable, had sudden attacks of dyspnœa, was unable to sleep, on account of restlessness, and at times talked as if greatly confused.

There was increase in the secretion of sweat with cold hands and feet. There was great tremor of the hands and lips. The cause of death was œdema of the lungs, the result of heart disease.

Twice in the course of the disease, when the life of the patient seemed threatened, great benefit was derived from Dr. Weir Mitchell's plan of treatment, a month's rest in bed, frequent feeding, massage and electricity. At one time the action of the heart was reduced from a pulse of 120 to 90 by the use of aconite.

A CASE OF LABOR WITH THREATENING SYMPTOMS.[1]

BY EDWARD REYNOLDS, M.D.

MRS. B., a large and strong woman, with a previous history of exceptionally good health, placed herself under my charge in the sixth month of her second pregnancy. She was at that time very little troubled by the disorders usual to her condition, and a routine examination of the urine detected nothing abnormal. She remained comfortable in every way until about the middle of the eighth month, when she began to complain of a constant pain in the lower abdomen, referred, for the most part, to the symphisis pubis, and due probably to distension from the rapid increase of the uterus, which was already of the size usual at term. Abdominal palpation, made at this time and frequently repeated, established the probable presence of a single, rather large fœtus, and an excess of liquor amnii. Two weeks later (at about eight months) her feet, hands, and eyelids became decidedly œdematous, and remained swollen, though to a varying amount, during the whole of the remainder of her pregnancy.

During the last six weeks she was troubled at different times by frontal headache, disturbed vision, a slight recurrence of the nausea of pregnancy, and by a constant ringing in the ears. The urine, which was examined repeatedly, was light-colored, of low specific gravity (1010-15), and was always passed in very large amount, usually three quarts in the twenty-four hours. It contained a very slight trace of albumen, but no casts were ever found. The patient stated that from early girlhood she had passed habitually a very large amount of urine, and that she thought the present amount was no more than was usual with her.

Treatment consisted of tr. ferri chlor., gtt. xx, t. i. d., regulation of the diet, and general hygienic precautions. The distension steadily increased, and by the end of pregnancy amounted to a distinct, though not excessive hydramnios, but she kept about the house, and was, under the circumstances, very active.

During the ninth month she was twice threatened with premature labor, and on both occasions the cervix was much shortened and the os dilated to the size of a ten-cent piece, by regular and intermittent uterine contractions, but with each attack, rest in bed and the moderate use of opiates resulted in the disappearance of the pains.

True labor set in at 1 A. M., October 26, 1887, and the patient reports that at 4 A. M. the membranes ruptured and a large quantity of water escaped. On my arrival, at 5 A. M., I found her in a state of intense, unintermittent pain, with apparently but slight exacerbations, although examination proved that the uterine contractions were strong and regular and fairly intermittent. The head was high and movable, O. L. A., well flexed. The os was of the size of a dollar, the caput already fairly large. The fœtal heart distant, but regular. The woman, who was usually calm and easy-tempered, was in a state of great excitement and irritability, alternately caressing and scolding her husband and nurse, throwing herself about the bed, screaming, and demanding instant relief. After watching her for a few minutes, I pushed up the head and allowed the gradual escape of about a quart of liquor amnii. The pain almost at once became intermittent, and the patient gradually returned to a more rational mental state.

During the next two hours she behaved well, and the pains were very strong and regular, with good intermissions. Under their influence the head became firmly engaged at the superior strait, but was delayed by bony resistance, and did not as yet bear against the os, which hung away from it, thick and rigid, and still no larger than a dollar. By 8 A. M. the patient was again becoming tired and irritable, and the moderate administration of ether was tried, but as this only increased the excitement, it was carried to the point of surgical anæsthesia for rest. Under ether, the os was soft and dilatable. On recovery from the ether the patient was somewhat more quiet, and at 8.30 A. M. the head made a slight advance and rested against the os, apparently with its greatest diameter just through the superior strait, but in spite of magnificent pains the os remained rigid, and no further advance occurred, while the patient's irritability steadily increased, until she reached a state of almost maniacal excitement, and at 10.30 A. M., during the acme of a pain, a marked twitching of the hands and eyelids was observed.

Ether was at once administered and forceps applied. The extraction of the head was slow and rather difficult, and the size of the shoulders caused a somewhat long delay. The child was a girl, living, $10\frac{1}{16}$ pounds in weight, naked. Its delivery was followed by the escape of about a quart and a half of liquor amnii.

The uterus, though firm, was very large, and a moderate hæmorrhage at once started up. The placenta was extracted manually, and the uterus was found to be in a condition of firm contraction, with but little retraction; that is, the uterine walls were firm and thick, the anterior and posterior walls lying in contact, but the intra-uterine space was more than large enough to contain the expanded hand. Moderate hæmorrhage continued, and a piece of ice was passed into the uterus; but, as this was not expelled, a corrosive douche at about 110° F. was substituted for it, with an equal absence of effect. The uterus was then freely massaged between the hands, one being applied to the abdomen externally, and the

[1] Read before the Obstetrical Society of Boston, April 14, 1888.

other inserted into the posterior cul-de-sac. Under this treatment the uterus slowly and gradually shut down and the hæmorrhage ceased, after lasting about ten minutes, the loss of blood being considerable (perhaps from twelve to fifteen ounces). This condition is rare, and was, I think, undescribed until Matthews Duncan reported a case in the *London Lancet* for October 15, 1887. It is probably associated, as a rule, with previous extreme distension.

The patient recovered from the ether in fair condition, and did thoroughly well till the fourth day, when she became rapidly œdematous, the swelling of the eyelids in especial being so great as to almost close the eyes. She complained of intense frontal headache, and the amount of urine had suddenly fallen from three, to one and one-half quarts in the twenty-four hours. It was rather dark, specific gravity 1020, albumen a trace, no casts detected. The skin was moist and the thirst great.

She was ordered to drink large quantities of water, to take an ounce of Epsom salts in divided doses during the evening, and to promote sweating by warm coverings, and, if necessary, by heaters. During the night she sweat profusely, had ten watery dejections, drank two quarts of water, and passed about a quart of much lighter colored urine, and by morning the headache had disappeared, the œdema was greatly diminished, and she said that she felt well. Free ingestion of water was kept up, and a saline was occasionally administered, and by the seventh day of the puerperium the œdema had disappeared, and the urine had returned to its usual quantity of three quarts, and to its usual light color and low specific gravity.

The remainder of her convalescence was rather slow, and was marked by several slight and transient attacks of œdema, which yielded readily to mild treatment, but at the end of six weeks she appeared perfectly well, and has enjoyed really perfect health from that day to this.

The case seems to me to possess several features of considerable interest. The constant and almost unbearable pain, evidently due to over-distension, and promptly relieved by the escape of a moderate quantity of liquor amnii; the rare and peculiar condition of the uterus post-partum; and finally, the occurrence of marked uræmic symptoms in the presence of a normal and even rather large amount of urine, and this in the case of a woman who is the subject of a habitual and apparently physiological polyuria, with the ready relief afforded by mild treatment, all seem to me to be points well worthy of record.

REPORT ON OBSTETRICS.

BY C. M. GREEN, M.D.

LAPAROTOMY IN EXTRA-UTERINE PREGNANCY.

BREISKY [1] (Vienna) reported a case in November, 1887, which is of great interest as being the only one so far as known, in which, with the child living, the entire fœtal envelopes were successfully removed. The child was asphyxiated, but was resuscitated. The sac was found to proceed from the right broad ligament, from which it was separated by numerous ligatures and removed; it was also attached to the mesocœcum, from which it was peeled off. In extra-uterine pregnancy, the fœtus being dead, Breisky advises against too long postponement of operation, lest the fœtal sac becomes too firmly attached and therefore more difficult to remove.

[1] Centralbl. für Gynäkologie, 1888, No. 20.

TRIPLET-LABOR.

Among 14000 deliveries in the Lying-in Hospital of Brussels there have been three cases of triplets. All three children of the first case remain alive: in the second case the delivery was premature (5 months), and the fœtuses macerated. MOERLOOSE [2] now reports a third case, in which the children were born alive, nursed, and were discharged in very satisfactory condition. The diagnosis of triplet-pregnancy was not made. After rupture of the membranes of the first child, the size of the presenting head seeming smaller than would be expected from the size of the uterine tumor, the presence of twins was suspected, and the detection of several large parts confirmed that suspicion. After the birth of the first child, two others were found in the uterus. The first child weighed nearly three pounds, the second four pounds and the third three and one-sixth pounds.

[2] Journal d'Accouchments, 1887, No. 11.
Centralbl. für Gynäkol., 1888, No. 15.

MORPHIA IN PUERPERAL ECLAMPSIA.

G. VEIT [3] (Bonn) recommends the exclusive use of morphia (by subcutaneous injection) in the eclampsia of labor, and ascribes the hitherto inefficiency of the drug to the much too small doses in which it has been given. Beginning with half a grain, one should boldly increase in twenty-four hours up to a grain and a half or even three grains. The apparent success of this treatment, by which during a series of years Veit lost no cases of eclampsia, made him so confident that he announced in his lectures that no one should ever allow a patient to die in eclampsia. But in the last year Veit lost two cases, and he therefore advises in severe cases to make use of hot baths (110° F.) with subsequent wrapping in blankets. Speedy delivery, so far as can be practiced without undue injury to soft parts is always indicated.

[The experience of Veit is interesting, and shows that the morphia treatment, to be successful, must be pursued heroically. It is a fair question, however, how far Veit's success was due to morphia and how far to the "speedy delivery" which he says is always indicated. Certainly speedy delivery under anæsthesia, with subsequent treatment directed to the skin and kidneys, is almost invariably successful; and it is difficult to see how morphia can save a case which does not respond to the above treatment.— REP.]

[3] Volkmann's Sammlung Klin. Vorträge, No. 304.
Centrabl. für Gynäkol., 1888, No. 17.

THE RELATION BETWEEN THE PUERPERAL PSYCHOSES AND PUERPERAL INFECTION.

HANSEN [4] (Copenhagen) has written a monograph on this subject for the purpose of showing that puerperal infection, to which most modern authors ascribe only an occasionally predisposing significance in common with other causes of the puerperal psychoses, possesses a far greater causal importance. During his service as hospital-assistant, partly in the psychiatric, and partly in the obstetric, departments, Hansen collected 49 cases of puerperal psychosis, of which num-

[4] Copenhagen, 1888. Centralblatt für Gynäkologie, 1888, No. 20.

ber he himself observed 21. In these 49 cases there was evidence of puerperal infection in not less than 42; and of these 42 cases not less than 12 terminated fatally. Among the seven cases in which the existence of infection could not be proved, there were two cases of eclampsia with hallucinations of short duration: the remaining five cases were of another nature, pure melancholia, hysterical mania, etc. With the exception of eclampsia the author ascribes to other ætiological factors no great significance, and lays the greatest stress on puerperal infection. The importance of the subject with respect to prophylaxis is evident.

THE EFFECT OF ERGOTIN ON THE INVOLUTION OF THE UTERUS.

BLANC[5] (Lyon), to test the effect of ergotin in promoting the involution of the uterus *post partum*, took a hundred cases of spontaneously delivered women, and divided them into three groups. To one group he gave ergotin for five days, to another group for ten days, and to the third group he gave no ergotin at all: in all cases the uterus was accurately measured every day. As the result of his observations Blanc concludes that the use of ergotin *does not accelerate* the involution of the puerperal uterus.

THE CÆSAREAN OPERATION AND ITS RELATION TO INDUCED PREMATURE LABOR, VERSION AND PERFORATION IN CONTRACTED PELVES.

LEOPOLD (Dresden) and his assistants have published a monograph on this subject,[6] based on the rich material of the Dresden clinic.

In Part I, KORN treats of the induction of labor, and gives the statistics of 45 cases in which labor was induced on account of pelvic contraction. In 35 cases the mothers convalesced without fever; in 9, there was fever for from one to three days; there was one death from sepsis. Korn is of the opinion that in the generally-contracted flat pelvis down to 3 inches in the true conjugate, and in pelves without transverse contraction down to 2.8 inches c. v., the indication is to induce labor, and that in the 32–36 week: if this time has passed, the case is to be left to nature, and, if the natural forces are ineffectual, resort should be had to podalic version and extraction (by forceps if necessary, and failing thus by craniotomy to the after-coming head).

On this last point Löhmann writes at length, from a material of 5,916 cases, in which internal version was performed 107 times. In cases wherein the conjugata vera of the brim does not fall below the measures above given, that is, 3 inches in the justo-minor, and 2.8 inches in the simple flat pelvis, Löhmann advises leaving the case to the natural forces, if the child is of only medium size. If operative interference is found to be necessary, then version, manual extraction, forceps or craniotomy, as may be necessary. If the child is lost by this method of procedure, the next time he would induce premature labor.

PRÄGER reports 71 craniotomies performed in the Dresden clinic within the last four years, and is persuaded that craniotomy performed under rigid asepsis has shown far better results than the antiseptic Cæsarean section.

[5] Lyon Médicale, 1877, August 7. Centralblatt für Gynäkologie, 1888, No. 17.

[6] Stuttgart, 1888. Centralbl. für Gynäkol., 1888, No. 19.

LEOPOLD contributes the section on the Cæsarean operation, and critically describes the 23 cases performed in his clinic in the last four years. He then raises the question whether we are to-day justified in putting this operation before and in place of perforation of the living child, or in what cases this is necessary. He would have it believed that laparotomy is, and must remain, a serious operation, even in the most practised hands: and while it is a great thing to save both mother and child, still if all the conditions of success are not fulfilled, one ought to resort to early perforation. The following table shows the results in Leopold's clinic of each of the methods under consideration:

Operation.	*Maternal Mortality.*
Induced premature labor	2.2 per cent.
Version and extraction	4.8 "
Craniotomy	2.8 "
Cæsarean operation	8.6 "

The mortality from sepsis alone was:

After induced labor	2.2 per cent.
" version and perforation	0.0 "
" perforation	0.0 "
" Cæsarean section	4.3 "

The percentage of living children discharged from the clinic was,—

After induced premature labor	66.6 per cent.
" version and extraction	59. "
" Cæsarean section	87. "

[Leopold's teaching is eminently conservative and will tend to check, it is hoped, a growing *furor operativus* in favor of the Cæsarean operation. Leopold has done much to bring this operation to its present high state of success, and reports a maternal mortality of only 8.6 per cent.; as 4.3 per cent. of fatality is attributable to sepsis, it is probable that this per cent. will be considerably reduced. It should be remembered, however, that Leopold's cases were carefully selected, and operated on in a well-equipped hospital, with all the conditions of success fulfilled. To undertake the operation after long delay, and after futile attempts at delivery by other means is reprehensible, does not deserve success, and seldom attains it. It is the duty of the obstetrician to acquire the art of accurate pelvimetry, and thereby establish the probabilities of success by different operative measures. When cases are seen sufficiently early, the induction of premature labor (with the modern improved methods for the care and feeding of premature infants) holds out gradually increasing prospects of success. In cases not seen until full term, while version and extraction succeed in very many cases of moderate pelvic contraction, the operator occasionally has to choose between the Cæsarean operation and the perforation of a living child. It is proper in such cases to let the patient and her friends decide; but the imperative duty of the medical attendant is *not to lose time;* to recognize early the probabilities of the case and to perform early the elected operation before conditions arise that jeopardize success by any operation. Cæsarean section is not a difficult operation, and if performed *early*, with rigid asepsis, and with accurate uterine suture, it ought to be successful in careful hands in a large per cent. of cases; but, as Leopold points out, it is a serious operation, and should not be undertaken, even by practised hands, unless the patient elect to run a greater risk herself rather than to acquiesce in the destruction of fœtal life. — REP.]

Clinical Memoranda.

A CASE OF PURULENT, PUERPERAL PERITONITIS, SUCCESSFULLY TREATED BY INCISION AND DRAINAGE.

BY SAMUEL B. WOODWARD, M.D., WORCESTER, MASS.

Mrs. M., a young American woman, had a short and easy labor with her second child early in November, 1887. A chill, four or five days later, was the first sign of impending trouble. For several weeks there was continual fever, profuse sweating followed by dryness of the skin and progressive emaciation, and towards the end of that time, abscesses appeared in the lower left arm, all nourishment was vomited, and the general condition became desperate.

Late in the evening of December 7th, she complained of sudden sharp pain in the abdomen, and showed signs of collapse. Dr. T. H. Gage was called in consultation by the attending physician, and on examination found a largely distended abdomen, which was flat on percussion with the exception of narrow spaces in each flank and below the ensiform cartilage. The left side of the abdomen was much larger than the right. Fluctuation was marked, the wave reaching entirely across the belly. Near, and to the left of the umbilicus, was an irregular prominence which suggested the pointing of an abscess.

The lateness of the hour, and the condition of the patient, prevented action at that time, and as Dr. Gage could not attend to the case the next day, he advised that I should be called in to aspirate the abdomen. I therefore saw the woman for the first time the next afternoon.

She was extremely emaciated. The tongue and teeth were covered with sordes. The skin was dry and harsh, and peeling from the body in large sheets (I was shown almost complete casts of the fingers and palm). The odor in the room was something to remember. The pulse was 130, and very weak; the temperature, 103°. The bowels were constipated; a small amount of bloody discharge flowed from the vagina. The uterus was with difficulty reached by the vagina being pushed far forward. Its size could not be determined. There was no marked bulging in the posterior cul-de-sac. The abdomen was irregularly distended, the left side being much more prominent than the right. Flatness on percussion extended over the entire left side, reaching to an imaginary line drawn from the pubes to the ensiform cartilage, about an inch and a-half to the right of the median line. There was no diminution of dulness in the flanks. Fluctuation was marked over the dull area. The right side of the abdomen was abnormally tympanitic with the exception of the flat area above noted near the median line, and another in the right flank. In the region of the cæcum, and along the descending colon could be felt several of the so-called "lymph cakes." There was little or no abdominal tenderness. No nourishment had been retained since the previous day, the patient vomiting at frequent intervals.

Little or nothing was to be gained by aspiration in this state of affairs, and laparotomy was advised. I was obliged to wait until the next day when Dr. Gage could be with me. December 9th, he examined the patient with us, noted the changes that had taken place, and agreed to a moderate incision, to be enlarged if it should seem advisable.

Accordingly, an incision two inches long was made, some four inches above the middle of Poupart's ligament, on the left side, and over three quarts of extremely offensive pus evacuated. As far as possible the operation was made aseptic. The abdomen was scrubbed and disinfected, as were the operator's hands and instruments. All hæmorrhage (which was rather free), was checked before the peritoneum was opened, and the abdominal cavity was washed out with large quantities of a saturated solution (1–1100) of hydronapthol, after which a rubber drainage-tube was carried down, as far as possible, behind the uterus, and the abdomen dressed with bichloride gauze and absorbent cotton.

I was, however, obliged to operate with the patient in bed, where she had been, almost without change, for several weeks, and in a room throughly saturated with septic matter, and was also obliged by her condition to suspend the washing out of the abdomen, while the wash-water was still turbid with pus. That night the temperature was 102.2°, the pulse 120. The dressings, which were saturated with pus, were changed. The patient was too weak to be further disturbed.

December 10th. The temperature was, in the morning, 99.5°. The abdomen was thoroughly washed out with several quarts of boiled water. Estimated amount of pus one pint. The patient had slept well. There had been neither nausea nor vomiting. The evening temperature was 100°; pulse 104. Everything was soaked with purulent fluid. The abdominal cavity was washed out as before.

December 11th. There was a very slight discharge at the morning washing, and about two ounces at night.

For the next five days the abdomen was washed out once daily, the amount of discharge being at the end of that time insignificant. During this time the temperature was normal; the patient began to take nourishment and to gain in strength; Constipation, which had been obstinate was relieved, to be followed by relaxation of the sphincters and involuntary movements.

December 18th. The temperature rose to 100°, and a small abscess was found in the left labium majus, and another in the left lower arm. After these were opened, the temperature fell to normal, and was not again elevated. The tube was retained in place seventeen days, perhaps several days longer than was necessary. The patient is now, five months later, in good health.

Circumscribed collections of pus in the peritoneal cavity after confinement, have been frequently found and successfully evacuated, but rarely after attaining the size here noted, and still more rarely after invasion of the general cavity of the abdomen. This invasion undoubtedly dated from the sudden collapse of Wednesday, and it was not until thirty-six hours later that the operation was performed. Abdominal examination showed so much diminution in the size of the abscess that much purulent matter had evidently escaped into the general cavity, but in the patient's almost moribund condition had probably started up but a subacute inflammation there.

The patient's condition at the time of the operation was so poor, that systematic laparotomy was rejected, and it was only as a last desperate resort that anything was attempted.

AN APPLIANCE TO PREVENT MASTURBATION.

BY EVERETT FLOOD, M.D., BALDWINVILLE, MASS.

ONE patient, a bright youth of seventeen, turned up this year at our Hospital Cottages, who kept himself from masturbation when not asleep, but often awoke to find himself accomplishing the act, much to his chagrin. He was an epileptic, presumably from this excess, which had become fastened upon him four years before. There was no other cause known. He was having thirty or forty seizures some days, the most of them being an ectasis of from ten to forty seconds' duration. He clinched his hands tightly, sometimes raising them above his head, and again pressing them tightly into the bed on which he sat, assumed a broadly smiling expression, but with mouth closed and eyes open, trembled a little just as a person often does as as he finishes a gape raised his feet from the floor a few inches both together, and suddenly resumed consciousness and his natural position.

Under treatment, dietetic and medicinal, he improved; and after his masturbating was entirely ended, the spasms did not recur, and have been absent for nearly three months.

The mechanical appliance used to assist his resolution was a plaster bandage applied as follows: A sheath of oil-silk was first made, to cover the penis and project an inch beyond, the limp organ hanging down straight between the thighs; then a layer of cotton wadding covered in the scrotum and buttocks, leaving a triangular opening, three inches on each side, for defecation. The plaster bandage then covered all, and went down around the penis and up about the waist, making, when hard, a complete casing, so that the boy's genitals might have been in the next county for all the sensation his hands could communicate.

He managed very well at stool, suffered no chafing from the edges between the thighs, walked freely enough (though he could not take full-length steps), and urinated while standing and holding the vessel under the projecting oil-silk. He surely did not masturbate.

He soon acquired a confidence that was comforting, and his self-respect began to improve. After a few weeks he felt tolerably safe; and, as the bandage had become soiled in places, and was rather disagreeable in consequence, it was removed, and has not yet been reapplied.

There seems to be no reason why such cases may not wear a similar appliance any length of time and with perfect protection. The writer trusts that this method, if not already in use or condemned as useless, may prove of service to others.

Therapeutical Memorandum.

ANTIPYRINE AS AN ANALGESIC.

BY EUSTACE L. FISKE, M.D.

FOR the past six months, observations upon the use of antipyrine have been made at the Adams Nervine Asylum.

In twenty-six cases its value as an analgesic or hypnotic has been more or less fully demonstrated. Headaches of a purely neuralgic character have been wholly or in part relieved. Those dependent on digestive disturbances have failed of any noticeable improvement from its use.

Patients with sensation of heat and fulness in the head, flushing of the face, and headaches preceding or attending catamenia, have been benefited.

Of twenty-two cases of headache, eleven were relieved, seven partially, and four not relieved, three of the latter class having but one exhibition of the drug.

Intercostal neuralgias, pain about the joints and heart, have also been relieved. In some patients, antipyrine, by diminishing the intensity of the pain or relieving it, allowed them to sleep, while in others it seemed to directly induce sleep.

One patient, having used morphine before admission for headache, received considerable benefit from antipyrine as a substitute, so that the use of the morphine was wholly given up. Unlike morphine in its after-effects, antipyrine also does not require increasing doses, and in many cases of headache or moderately severe pain nearly as satisfactory results can be obtained, but in extreme cases it is less reliable. No unpleasant effects, like cardiac depression or collapse, have occurred in any case.

Some patients prefer antipyrine to any other remedy, partly because of relief from pain, and partly because of its agreeable effect, one patient enjoying the slight sweating which followed its use.

When first used, ten to fifteen grains in solution were given, and occasionally repeated in a few hours, if needed. Later, fully as good results have been obtained from four or five grains every half-hour till three to five doses are taken, as required. A few patients take it at evening when needed, one in particular every night. Another obtained immunity from pain on two grains, t. i. d., and preferred it to any thing else. No hypodermics were given.

Thus, from the above, we seem to have in antipyrine a partial substitute for morphine in relieving pain without deleterious effects, and one whose action is more or less certain.

Reports of Societies.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

C. M. GREEN, M.D., SECRETARY.

APRIL 14, 1888, the President, DR. WILLIAM L. RICHARDSON, in the chair.

DR. EDWARD REYNOLDS reported

A CASE OF LABOR WITH THREATENING SYMPTOMS.[1]

DR. BOARDMAN pointed out the distinction between contraction and retraction, believing it to be imperfectly understood and appreciated. The patient is not safe from hæmorrhage until the uterus has been reduced to its proper size by retraction of its musculature.

DR. J. C. MUNRO, a guest, raised the query whether the process of retraction may not have been interfered with by an hydræmic infiltration of the uterine muscle. May not a serous infiltration of the uterus exist to such a degree that retraction cannot take place until many contractions of the uterus, in-

[1] See page 30 of the Journal.

duced by massage or otherwise, have expressed the fluid?

Dr. J. P. Reynolds did not see why any distention of the uterus might not make it difficult for retraction to take place, even without any infiltration. He is always impressed by the alarm felt by some men at the rythmical contractions and relaxations of the uterus *post partum:* such phenomena are quite normal and essential to the process of retraction.

Dr. C. P. Putnam, a guest, asked the reader if in this case the uterine wall felt œdematous. The reply was in the negative: the walls felt firm, and the uterus ultimately became hard and globular, and was below the symphysis on the tenth day.

The President asked what symptoms there were of uræmia. The reader replied that œdema of hands and eyelids, frontal headache, return of nausea, changed temperament and vision, and twitching of the eyes and hands when the pains came on certainly suggested that condition.

The President did not recognize œdema as in any way pointing to uræmia. He would not have been concerned at that semblance of symptoms, if the urine was abundant. He had seen cases of convulsions in which the urine was said to be abundant, but had found on catheterizing only a slight amount. He had never seen eclampsia occur when there was any amount of recently secreted urine in the bladder; but it should be remembered when in an eclamptic urine is found in the bladder, that the patient may not have passed water for some time, and that no urine may have been secreted for some hours. Hydramnios is not an uncommon cause of eclampsia from pressure; but the urine always shows some disturbance of the kidney.

Dr. Blake queried whether convulsions might not occur from intensity of pain, with no concomitant uræmic symptoms.

Dr. J. P. Reynolds quoted a case in which the patient had eight convulsions, and yet her urine had been ample. He would not feel easy with such an array of symptoms as the reader's case presented, as the amount of urine might suddenly fail. Moreover, with eclampsia threatening, any sudden shock, even a sharp word, may serve to induce the convulsive seizure.

Dr. Rotch reported

A CASE OF NOMA,

and presented for the inspection of the Society a photograph of the disease taken on the last day of the patient's life.

A girl, aged four years, entered Dr. Rotch's service at the City Hospital, July 5, 1887, with measles. Up to within two weeks of entering the hospital the patient had had an attack of pertussis of rather long duration. When convalescent from the measles, about July 7th, the child began to lose her appetite and to have a cough, which soon developed into an acute catarrhal pneumonia. The urine was reported as normal at this time.

July 24th there was found to be very little improvement in the pneumonia, and the child was very weak and emaciated.

July 25th the right cheek began to swell, and a bad odor to come from the mouth, but nothing especial could be found in the mucous membrane of the buccal cavity.

July 29th the swelling of the cheek had increased, there was œdema of the lips and eyelids, so that the right eye was partially closed: the swelling was semi-fluctuating: the right nostril was apparently closed. The temperature at this time varied from 102 to 103. The cough was much lessened.

July 30th, a bluish-black patch the size of a cent was found at the right corner of the mouth, and this rapidly increased during the day.

August 1st, the dark-colored area had increased considerably in size, and presented a circular outline, with a clearly marked line of demarcation: the child was stupid, and had a profuse greenish diarrhœa.

August 2d. Extreme emaciation and rapid extension of the colored area, which involved the whole of the right cheek, right side of mouth, and right nostril, but no loss of tissue. Died suddenly.

Radical treatment of the case was deemed inadvisable on account of the hopeless condition of the patient at the time when it was possible to make a diagnosis.

In answer to questions from the members, Dr. Rotch stated that the disease was very rare, that it occurred in girls much more frequently than in boys, and was most apt to develop in a moist climate: that it is not known to occur in nurslings: and most frequently is found between the ages of two and twelve: that it was essentially a disease which developed in children reduced by, or convalescent from, severe diseases: that mercury probably had nothing to do with the etiology of true noma: that the disease was almost always unilateral, and was apt to start at the corner of the mouth: finally, that purulent and even gangrenous infiltration of the lungs and a catarrhal condition of the intestines, apparently caused by the offensive discharge in the mouth, and posterior nares, are frequently found.

Dr. Rotch also spoke of the difficulty of making an early differential diagnosis from cases of gangrenous

stomatitis, where, if the case was one of real noma, the actual cautery was indicated at once.

DR. C. P. PUTNAM, a guest, expressed his interest in so rare a case, he never having seen a case in America, nor heard of one in this vicinity. He saw one case in Vienna: in that case the slough dropped out and left a hole in the cheek.

DR. SINCLAIR remembered a case that Dr. Perry had reported thirty years ago, following scarlet fever.

DR. ELLIOT had recently seen a case at the Massachusetts General Hospital: there was a greenish patch on the side of the child's mouth. The patient was in fairly good condition, and was to be operated on. He believed that Dr. R. H. Fitz regarded noma as of parasitic origin.

DR. HENRY JACKSON, a guest, had found reported in Dr. J. B. S. Jackson's cases two cases of noma, both following acute exanthemata.

DR. ABBOT had had one case of noma following measles, in a child under two years of age. The disease began on the gum on the right side, and the child died in a week. It had been thought at the time that the disease was consequent upon mercurial treatment; but there was no other evidence of mercurial poisoning, and he could not believe in such an origin of the affection.

DR. GREEN reported the following case of a

FOREIGN BODY IN THE FEMALE BLADDER SIMULATING STONE.

The patient was a young woman of previous good health, who for some time past had suffered with frequent and painful micturition. There was almost constant pain through the bladder, which was increased by motion, especially in riding, or in walking on uneven surfaces, as in stepping from the sidewalk to a street-crossing. Occasionally particles of gravel were voided, and rarely, minute clots of blood. Examination of the bladder proved very difficult, as the urethra was exquisitely sensitive; but a silver female catheter was passed, and the urine thus obtained found to be alkaline and of strongly ammonical odor. On manipulation the catheter was felt to pass over a gritty mass, which on subsequent bimanual examination appeared to be about the size of a hen's egg. No clink was elicited by the impact of the catheter; but from the symptoms and other facts mentioned, a diagnosis was made of vesical calculus. After some preliminary treatment the patient was etherized and a lithotrite passed into the bladder to crush the suspected stone; but repeated attempts failed to enable the operator to grasp the stone, for on closing the lithotrite it seemed to grasp only the bladder wall, and finally the operation was abandoned. Thorough washing of the bladder, however, brought away much sand and several small pieces of calcareous substance, and it was decided to wash the bladder daily with a solution of boracic acid and await further developments, in the belief that what had been taken for a stone must be one or more masses of calcareous matter adhering to the bladder wall.

For four days the patient was much better, and daily washings continued to bring away gritty particles. The next day, however, the urine was very offensive and contained blood and mucus: the patient was unable to sleep on account of pain and vesical tenesmus. It was then decided to dilate the urethra and explore the bladder with the finger: this being done, the originally suspected stone was found to consist of a soft rubber catheter, coiled up to the size of a hen's egg, and thickly coated with calcareous deposit. This it was which was caught in the lithotrite and gave the sensation of catching the bladder wall. No incontinence followed the dilatation of the urethra, and the patient made a very satisfactory recovery. She denied all knowledge as to how the catheter came to have been left in her bladder, and expressed great indignation that some doctor should have been so unskilful; but from my observation and subsequent knowledge of the patient I have no doubt that the catheter had been used either by herself or by an abortionist for the purpose of interrupting a supposed pregnancy, and had been ignorantly passed into the bladder and lost there.

DR. ELLIOT spoke of a case in which, having dilated the urethra, he had found calcareous masses plastered over the bladder wall, and which he was unable to remove with the finger. He therefore crushed off the masses with the lithotrite, but had great difficulty in washing out the bladder: he finally found that the evacuator was clogged with pieces of twisted paper which proved to be fragments of a paper lamplighter. The lamplighter had evidently been passed into the bladder by the patient and had become the seat of calcareous deposit and subsequently adhered to the bladder wall.

Dr. Elliot suggested that for purposes of digital examination the female bladder should be empty of urine, the finger can then palpate the whole surface. In regard to the use of the lithotrite in such cases, the instrument should be held in a perpendicular position, otherwise it hits the uterus.

In the case alluded to, recovery was speedy, and there was no incontinence: he had used for dilating the urethra, first, Hank's dilators and then the finger.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

CHARLES P. STRONG, M.D., SECRETARY.

MEETING, April 2, 1888, DR. F. C. SHATTUCK in the Chair.

DR. BUNDY presented a paper upon

TWO CASES OF GRAVES'S DISEASE.[1]

DR. VICKERY expressed his pleasure at hearing the favorable result of these cases as in his experience the prognosis was very unfavorable.

DR. G. L. WALTON said that he quite agreed with Dr. Vickery as to the ultimate prognosis of these cases; they recur in all their severity and at short notice, even when improvement has been continuous and steady. Excitement, or any cause such as tends to bring on neurasthenia and other neuroses, will often overweigh the most painstaking and temporarily successful therapeutic efforts. Still, even temporary improvement in the symptoms is grateful, and sometimes the improvement is persistent enough to almost give promise of permanent relief. We are therefore impelled to make every effort. He was pleased that Dr. Bundy had mentioned electricity as one of the apparently effective means among those employed, for its application had seemed to him very valuable. The

[1] See page 27 of the Journal.

galvanic current, not very strong, nor with long-continued sittings, but regularly and continuously applied, he had found most effective. Rapid changes in the current were to be especially avoided, since these patients were even more susceptible to disagreeable cerebral effects of sudden galvanic shocks than the average patient, resembling in this respect the neurasthenic, who is liable to become dizzy and to suffer from headache after comparatively small doses of galvanism, when applied to the head or sympathetic. In this connection he was glad to notice that Dr. Bundy had laid stress on the neuropathic history, and nervous tendency of these patients. This is a feature of Basedow's disease, liable to be overlooked in making the diagnosis; we look for the rapid pulse, the exophthalmos, and the enlargement of the thyroid, of which not all are in every case present, while the nervous irritability is often, at least, as well-marked a symptom as either of the other three, He remembered a case which he had at first mistaken for neurasthenia: the patient was a thin spare man with an anxious expression, and with quick, almost choreic movements; he complained of sleeplessness, inability to work or think, loss of memory, and general mental irritability and depression. The eyes were not noticeably prominent; the pulse was rapid, 120 to 130, but this did not attract especial attention, as it is not infrequent in neurasthenia, to find such a pulse during the excitement of an examination by a new physician. The enlarged thyroid was discovered later, which changed the diagnosis and modified the treatment materially. This patient showed marked improvement under the use of galvanism. The coincidence of mental irritability and other cerebral symptoms with the thyroid enlargement may throw some light on the pathology of neurasthenia, inasmuch as the thyroid enlargement is manifestly due to vaso-motor disturbance. It seems therefore, that the neurasthenic symptoms may, perhaps, depend on similar disturbances in the brain. It is true that the terms cerebral hyperæmia and anæmia have fallen justly into comparative disuse, but it seems not unreasonable to suppose that a weak and irritable sympathetic may cause functional cerebral disorder by impairing the regularity of blood-supply to the nerve-centres.

Dr. F. C. Shattuck alluded to a case of complete recovery spoken of by Flint, in his "Practice of Medicine," and said that though he had never been so fortunate as to encounter such a favorable result he had seen marked and very gratifying improvement. The constant current applied to the cerebral sympathetic he has seen exert marked effect on the exophthalmos, but of no service for the cardiac symptoms.

Of late, it has been stated by Vigouroux, that an early symptom of Graves's disease is a marked diminution of the resistance of the body to the electrical current; if this observation prove to be correct we shall thus acquire a valuable diagnostic sign of early and improperly-developed cases.

The theory that the pathology of the disease consists in an irritation of the sympathetic, does not seem tenable; while this theory may explain the rapid action of the heart and the prominence of the eyeballs, the dilated vessels of the thyroid gland are indications of a paralysis rather than an irritation by the sympathetic.

The reader spoke of the bruit heard in his case over the thyroid, as systolic at times; in those cases which have come under the observation of the speaker, the murmur has been continuous. It seems probable that a number of cases in which only two of the three cardinal symptoms are present, and those not very strongly marked, escape recognition. A patient recently under observation had suffered for years from recurrent attacks of acute and subacute articular rheumatism, resulting in disease of both the aortic and mitral valves. About a year ago she had an hemiplegic attack, presumably due to embolism, and since then has presented a variety of vaso-motor symptoms. The eye balls are prominent and the innervation of the heart is much more seriously impaired than the condition of the valves and cardiac wall would seem to warrant.

Dr. Jelly referred to the case of a lady of twenty-five, coming from an insane family, who presented typical symptoms, but for the last eight years she has been well; the eyes are still slightly prominent, but the heart gives no trouble and the thyroid is all gone.

Dr. Jelly reported

A CASE OF TETANY; A CASE OF GENERAL PARALYSIS OF TEN YEARS' DURATION; DEATH FROM HEART DISEASE.[2]

Dr. Walton said that he was especially interested in the case of tetany as it showed an analogy between this disease and hysteria. That such an analogy existed was already evident from the character of the convulsions, their approach on mental excitement, their complete disappearance without further sequelæ than the lameness of the muscles affected, and by the manifest absence of organic disease of the central nervous system. The allied nature of the hysterical convulsions and those of tetany, was brought out with striking force, however, in Dr. Jelly's case, by the appearance later, in the same patient, of typical hysterical seizures. The spasms, which were the principal feature in the case, could certainly not, however, be named hysterical, the biting of the tongue alone would almost preclude that diagnosis, to say nothing of the typical contractures, which corresponded perfectly with those of tetany.

PROCEEDINGS OF THE GERMAN MEDICAL SOCIETY OF PHILADELPHIA.

CHARLES L. WEED, SECRETARY.

May 14, 1888, Vice-President Lawrence Wolff in the Chair.

Dr. Carl Seiler read a paper on

HYPERTROPHY OF THE TONSILS.

He opened his remarks by stating that as yet we did not know whether the tonsils performed any physiological function or not, but that the view was prevalent that these organs were residuary, and of no use in the economy. He stated, further, that in the normal condition they were invisible, and became visible only by a hypertrophy of their tissue. This view had lately been forcibly expressed by Dr. Daly, of Pittsburgh, and found a proof in the fact that even when slightly hypertrophied in youth, they usually disappeared at the age of twenty-five or thirty years. They had no connection whatsoever with the genito-urinary apparatus, as had recently been asserted.

[2] See page 25 of the Journal.

After briefly describing the minute anatomy of the tonsil, the lecturer entered upon the subject proper, and said that we could recognize three distinct varieties of hypertrophied tonsils: first, the ordinary soft hypertrophied tonsil, most commonly met with in childhood and early youth, and rarely found in adult age. This variety is characterized by simple enlargement of the tonsillar tissue, with a corresponding increase in the size of the crypts, which latter mostly contain plugs of white, cheesy secretion. This secretion in some cases becomes putrid, and emits an extremely disagreeable odor. This simple hypertrophied tonsil is frequently the seat of periodical, acute inflammation, which may or may not produce parenchymatous suppuration. Coexisting with this chronic tonsillar hypertrophy, we usually find a chronic naso-pharyngeal catarrh, and more or less hypertrophy of the pharyngeal tonsil. These conditions give rise to a variety of symptoms, the most prominent of which are interference with proper vocalization and articulation, insufficient aeration of the blood, gastric disturbances, and frequently, catarrh of the middle ear.

The second variety is the so called scirrhous tonsil, first mentioned by Dr. Jarvis, of New York, which is characterized by a smooth, exterior surface and a hard, cartilaginous feel to the touch of the finger or probe. The crypts are usually not enlarged, and, if so, rarely contain the cheesy secretion. This variety of hypertrophied tonsil is met with usually in young adults, and is rarely, if ever, the seat of acute periodical inflammation. The hardness is imparted to it by a deposit of connective tissue between the cellular elements, and particularly around the bloodvessels, canaliculizing them and thus depriving them of their contractility. They interfere by their presence with vocalization and articulation, and naso-pharyngeal catarrh, as well as chronic laryngeal inflammation, frequently coexist with them.

The third variety may be called the ragged, hypertrophied tonsil, and is nothing but the result of the first variety having been the seat of frequent tonsillar abscesses, which have caused parts of the tissue to slough away, leaving a ragged mass of tonsillar tissue between the faucial pillars. It is usually found in young strumous adults, and is, perhaps, the most dangerous to the general health, inasmuch as it gives lodgment to septic material, and thus in many cases produces chronic septicæmia.

Dr. Seiler then entered into the consideration of the treatment of hypertrophied tonsils, and said that in all cases the offending masses should be removed, but that the method by which this was to be accomplished should be carefully considered and adapted to the requirements of each individual case. All chemical caustics applied to the surface of the tonsil were worse than useless, as their application gave rise to a great deal of pain, and had to be kept up for a considerable length of time to produce any results at all. In the ordinary soft variety, the tonsil was best removed by ablation with the tonsillotome. Care should, however, be taken not to wound the edge of the anterior pillar, because a small branch of the tonsillar artery runs close to this edge, and, when cut, gives rise to hæmorrhage difficult to control. If the anterior pillar is adherent to the tonsil it should be loosened, and if this is not possible, owing to the bands of fibrous tissue connecting the pillar with the tonsil being too strong to be torn, the tonsillotome cannot be used with any degree of safety, and the galvano-cautery knife should be used. After the projecting portion of the tonsil had been ablated, the cut surface should be brushed over with a sixty-grain solution of nitrate of silver to cause contraction of the capillaries and to cover the wound; and any secondary hæmorrhage, which, however, rarely occurred, should be controlled with a strong solution of tannic and gallic acid used as a gargle. The old method of removing the tonsils with the volcellum and bistoury, the lecturer said, was unsafe, as the edge of the anterior pillar, even when not adherent, was too easily wounded by the heel of the knife. Total extirpation and enucleation was also dangerous, besides being unnecessary, except in the extremely rare cases of cancerous growth in the tonsil.

The safest and only applicable method of removing hypertrophied tonsils in cases of ragged tonsil was the galvano-caustic. In applying this method, the galvano-cautery knife should be heated to a bright-red heat, and should then be pressed into the tissue of the tonsil by entering one of the crypts and cutting with it from within outward, so that the eschar resulting from the burn can easily fall off, and does not become impacted in the tissue of the tonsil. This procedure, Dr. Seiler said, did not give rise to any pain, and should be repeated at intervals of a week or ten days, and from four to six applications usually sufficed to reduce the tonsils to a size compatible with health and comfort of the patient. Under no circumstances should any operation for the removal or reduction of hypertrophied tonsils be undertaken while the organ was in a state of acute inflammation. In the case of the ragged tonsil, scraping the tonsillar tissue from the capsule with a sharp curette had been recommended, but this method was not only very bloody, but also painful, and on that account the galvano-cautery was to be preferred.

For the removal of the scirrhous tonsil, Dr. Seiler recommended the Jarvis snare as the best and safest instrument. The steel-wire loop should be laid around the enlarged tonsil, and by turning the screw, should be gradually decreased in size until the portion encircled by the wire was cut off. If done slowly, the operation occasioned very little pain, and time was given for the edges of the rigid vessels to become agglutinated, so that little or no hæmorrhage resulted. The best way, he said, was to start the snaring process and then let the patient turn the screw himself, trusting to him that it was not done too quickly; for the patient would tighten the loop until he felt the pain, and would then stop, to begin again when the pain had ceased. The time occupied in thus removing a scirrhous tonsil was from two to three hours.

DISCUSSION.

DR. MUEHLECK suggested that many of the supposed cases of hæmophilia were cases of scirrhous tonsil, in which the canaliculization of the vessels caused profuse and persistent hæmorrhage after ablation. For this reason he asked the lecturer to definitely state the diagnostic differentiation between the soft and fibrous forms.

DR. VANSANT desired the judgment of Dr. Seiler upon the use of alkalies in acute tonsillitis, especially of sodium bicarbonate and borax. He inquired furthermore whether, after repeated attacks of inflammation, the resulting hypertrophy ever spontaneously disappears. In the matter of diagnosis, it should be

borne in mind, that other tissue changes than simple inflammation and hypertrophy may have their seat in the tonsils. It is a question whether the initial lesion of syphilis would be likely to lead to such error. The cases he had observed presented a mere superficial ulceration without induration. In none of the cases reported by Tchisbriakoff, Peterson, Tomasheosky and Seveki within the past year, was the fact of induration mentioned. He would like to know whether this peculiarity is constant in a lesion in this location.

Dr. Wolf had had considerable success in aborting acute tonsillitis by Dr. Seiler's method; namely, by pencilling with a twenty-five per cent. solution of silver nitrate. The attacks were, however, aborted only when the application was made within the first twenty-four hours. Nevertheless, even a later application was generally successful in preventing suppuration, besides giving great comfort to the patient by reducing the tension and pain.

Dr. Friebis noted the frequent association of tonsillar hypertrophy and otitis media, but was not clear in his mind whether the same is to be attributed to impeded nasal respiration (mouth breathing), or to the septic influences from the crypts, or to mechanical obstruction of the mouth of the Eustachian tube by the swollen gland.

Dr. Miller, in using the cautery knife, had frequently had it stick in the tonsillar tissue, and had caused pain and hæmorrhage by its violent removal. This difficulty was due to a too early shutting off of the current and could easily be avoided. The knife should be hot when applied and removed. He had used the galvano-cautery more often than the guillotine, even in the soft variety, owing to an unconquerable prejudice on the part of the patient against any cutting operation. For the same reason the blade must be heated after it is in the mouth so that the patient may not see it. If both tonsils were treated at one sitting, deglutition would be rendered unnecessarily painful. He treats them, therefore, in alternation, with two sittings per week. He reduces them so that they do not project beyond the pillars, and leaves the rest to cicatricial contraction. A most useful battery for the purpose is that of Dr. Seiler. The method of gouging out the growth with the finger is not only barbarous but dangerous. He would not agree with the lecturer that the tonsils are necessarily in a pathological state when they fill the space between the anterior and posterior pillars, and do not extend beyond them.

Dr. Weed quoted the two cases reported by Croly, of primary sarcoma of the tonsil, in both of which, incisions were made to evacuate the supposed abscess. Such an affection might be mistaken for a hypertrophy even more easily than for quinsy, and the guillotine might evoke a dangerous hæmorrhage. In cases of acute tonsillitis the diagnosis is rendered difficult by the fact that a variety of affections have here their local manifestations. Le Gendre considers the tonsil the site of the initial lesions of scarlatina and diphtheria, and Fraenkel calls attention to other varieties of septic infection from this gland. Le Brun looks upon all tonsillitis as infectious, and regulates his therapeusis accordingly. On the other hand, Frœlich reports a group of cases in some of which the tonsil seems to have been the seat of local lesion, although not the point of original inoculation. The first case was one of so-called follicular tonsillitis followed by a fatal suppurative peritonitis. At the autopsy, Frœlich and his assistant sustained slight wounds with a resulting follicular tonsillitis. A number of the household developed similar symptoms. In addition to the cases quoted by Dr. Vansant, of syphilitic inoculation, are a number collected by Dr. Delavan in the "Annual of the Universal Medical Sciences," just published. There being, therefore, so many varieties of acute tonsillar inflammation, it is idle to vaunt any one remedy as being suited to all cases. The strong solution of nitrate of silver had in the speaker's hands seemed to abort the attacks of recurrent quinsy, or had at least modified the process, but had failed in other forms of inflammation. He was unable to state whether the virtue of the silver salt was in its astringency or in its germicide power. In tonsillotomy for hypertrophy, it is, according to the experiments of Zuckerkandl, impossible to wound the internal carotid without cutting the wall of the pharynx.

Dr. Seiler, in closing the discussion, said that the differentiation between the soft and scirrhous varieties of hypertrophy was easily made by the sense of touch, the former being soft and doughy, while the latter was hard and cartilaginous and never occurs before the age of puberty. He believed that an initial lesion of syphilis upon the tonsil was never indurated. This was owing to a poverty of submucous connective tissue. An early diagnostic sign is glandular involvement at the angle of the jaws. The much vaunted alkaline treatment of acute tonsillitis with bicarbonate of soda or borax, had in his experience given no results greater than a temporary alleviation of the pain. The only abortive treatment with which he had had success, was that mentioned by Dr. Wolff. There is no doubt that hypertrophy of the tonsil does sometimes disappear with the advancing age of the patient. This is due to a physiological atrophy of the glands. The periodical attacks of acute inflammation may be prevented by a proper tonic treatment, attention to hygiene, and particularly by ablutions of the neck and chest morning and night.

Recent Literature.

Organic Analysis: A Manual of the Descriptive and Analytical Chemistry of Certain Carbon Compounds in Common Use. By Albert B. Prescott, Ph. D., M.D., Director of the Chemical Laboratory in the University of Michigan. New York: D. Van Nostrand. 1887.

This volume fully maintains the high standard characteristic of Dr. Prescott's works. The statement in the preface that "for certain common carbon compounds, it has beenunder taken to furnish first, systematic chemical description, and thereupon the methods of analytical procedure, qualitative, quantitative, and for proofs of purity, all with liberal citations of the authorities for convenience of further reading," gives but an inadequate idea of the large amount of valuable material which has been brought together in this volume. The following is a partial list of the subjects and compounds treated by the author:

Alkaloids (general article); Alkaloids of Aconite, Cinchona, Coca; The Midriatic, Opium and Strychnos Alkaloids; Ptomaines; Coloring Materials; Ele-

mentary Organic Analysis; Glycerine; Fats and Oils; Plant Analysis; Phenol; Teas of Commerce; and several important Organic Acids, as Acetic (including vinegar), Tartaric (including baking powders), Salicylic, Tannic Acids, etc. All the subjects are treated at considerable length and in the most thorough manner. The sections on fats and oils, and those on the various alkaloids, are worthy of mention in these respects.

To give some idea of the method of treatment adopted by the author, we insert the following table of contents, taken from the article "Opium Alkaloids." List of alkaloids, with description of those of minor importance; chemical constitution. Morphine, yield in opium; crystalline form and heat reactions of the alkaloid and its salts; physiological effects; solubility of the alkaloid and its salts; color tests and limits of each, precipitations; separation from tissues in cases of poisoning, with limits of recovery and organs of deposition; estimation, gravimetric and volumetric, in opium by the several pharmacopœial and other methods, and in tincture of opium by authorized standards; impurities by the pharmacopœial standards in different countries. Narcotine; Codeine; Apomorphine; description, analysis and tests for purity.

Subjects which have not received such thorough treatment in the text are supplemented by references to the most valuable literature on the subject, for convenience of further reading. The bibliography is in fact a characteristic feature, and is so extensive as to add much to the value of the book. The book is not entirely a compilation, however. There is much in it which is the result of the author's own researches and of his many years of experience.

We realize the difficulty in doing justice to a work of this kind in a brief review. The volume certainly represents a vast amount of labor on the part of the author, and is very creditable to him and a distinctly valuable addition to chemical literature. An exceptionally complete index covering thirteen pages accompanies the book. The publishers deserve a word of commendation. The book is well printed, in large type, and on paper of good quality. W. B. H.

The Pathology, Diagnosis and Treatment of the Diseases of Women. By GRAILLY HEWITT, M.D., London. Edited with notes and additions by H. MARION SIMS, M.D., New York. New York: E. B. Treat, 771 Broadway. 1887.

This is the same book which was published in 1883 by Bermingham & Co. The only changes which can be discovered are that it now appears in three volumes, and has two short additions to the appendix, one describing a pessary, the other a tube for drainage after laparotomy. Even the American editor's preface is identically the same, except that it is dated April, 1886, instead of April, 1883. The reader must, therefore, not expect anything new; but as the book is a standard one, its purchase may be safely recommended. It was noticed in detail at its first appearance, so that nothing need be added now.

Quiz Compends, No. 4. *A Compend of Human Physiology.* By ALBERT P. BRUBAKER, A.M., M.D. Fourth edition, revised and enlarged. Philadelphia: P. Blakiston, Son & Co. 1888. pp. 174.

A "quiz" book which has reached a *fourth* edition doubtless meets a demand among students at least equal to its merits. This particular compend, despite its brevity, is in general fairly exact, and will not seriously mislead those who have drunk freely from some larger and fuller spring of knowledge. We must, however, express the hope that, at no distant day, a newer edition will revise the description of deglutition (p. 27); drop or explain the "pneumic acid" theory of respiration (p. 60), which has long since disappeared from most text-books on physiology outside of Philadelphia; put the formation of urea (p. 75) in its true light, and state more accurately the nervous relations of the sweat secretion. *Kath*electrotonic (p. 90) appears to have escaped the keen eye of the proof-reader.

Druett's Surgeon's Vade-Mecum: A Manual of Modern Surgery. Edited by STANLEY BOYD, F.R.C.S., Eng. Twelfth edition with three hundred and seventy-three wood engravings. Philadelphia: Lea Bros. & Co. 1887.

In its new form this well-known work is enlarged to 985 pages. It has been changed from the last edition so extensively that "scarcely a paragraph of the latter remains unaltered." The chapter on the Eye has been replaced by a short description of the injuries of that organ, by Silcock of "Moorfields." Pathology is more conspicious than in previous editions and a copious index is appended. The chapter on Arteries is more complete than is usual in works of this class, and is quite satisfactory. Seventy-three new cuts have been added, forming an almost complete series illustrating the subject of arterial ligation and representing the wound of operation. Aseptic surgery is advocated but no especial attention is paid to its details except at time of operation. The book is an excellent text-book on general surgery and will prove a valuable one to the student or general practitioner, but a careful perusal fails to show that it possesses any greater value than the best works on this subject now at the disposal of the profession.

The Modern Treatment of Pleurisy and Pneumonia. By G. M. GARLAND, M.D. Being No. 7 of the Physicians' Leisure Library. Detroit: George S. Davis. 103 pp.

The authorship of this brochure is a guarantee that it is well written and doctrinally sound. For the portion which treats of pleurisy we have no word of criticism. Of the forty pages given to pneumonia, only twenty deal with treatment. On page 85 we find: "Cold baths are unquestionably a thing of the past. Even in typhoid fever . . . they have fallen into desuetude." We cannot agree with Dr. Garland here; certainly, as far as typhoid fever is concerned, and if the term cold is inclusive of cool, whole baths have never been very generally used in this country in the treatment of acute febrile disease, and even this limited use was curtailed. We believe that now, however, a slow revival of their use is going on, and that they will be more used in the future. In Europe they have held their place much more firmly than with us. Formerly, they were employed too exclusively with reference to the reduction of febrile temperature, at the door of which all evils were laid.

In so small a book, it would seem to us better not to refer to so many writers, some of whom are by no means authorities. F. C. S.

Guide to the Health-Resorts in Australia, Tasmania, and New Zealand. Edited and compiled by Ludwig Bruck. Centennial edition. The *Australasian Medical Gazette* Office, Sidney. London: Bailliere, Tindall & Cox. 1888. pp. 183.

This cannot fail to be a very useful work to Australasians and to travellers from without. Of course, its practical usefulness to us in this country is small, but it is of considerable interest, nevertheless. We Americans are inclined to think that ours is the country, *par excellence*, of material prosperity and rapid growth. Such a book as this is a reminder of what the Anglo-Saxon race is doing to advance civilization at the antipodes. F. C. S.

A Guide to the Practical Examination of Urine. For the Use of Physicians and Students. By James Tyson, M.D. Sixth edition, revised and corrected, with a colored plate and wood engravings. Philadelphia: P. Blakiston Son & Co. 1888.

This admirable manual is too well known to require an extensive notice. The present edition has been carefully revised and has received a few additions rendered necessary by recent advances in the chemistry of the urine. Previous editions of Prof. Tyson's book have been very favorably received, and we predict for the present one an equally cordial reception. It is without exception the best work of the kind in the English language.

Chemical Analysis of Healthy and Diseased Urine, Qualitative and Quantitative. By T. C. Van Nüys, Professor of Chemistry, Indiana University, with 39 Wood Engravings. Philadelphia: P. Blakiston, Son & Co. 1888.

This book is devoted especially to the chemistry of the urine, including sediment and calculi. The quantitative part is exceptionally complete for a small manual. The preparation of the standard solutions required for quantitative work and the methods for the estimation of the various constituents of the urine are explained very clearly and with unusual attention to detail. The book is in all respects an excellent one, and as a guide to quantitative urinary analysis has no superior among the smaller works on the urine.

The Student's Guide to Diseases of the Eye. By Edward Nettleship, F.R.C.S. Third American from the fourth English Edition, with a chapter on Examination for Color Perception. By William Thomson, M.D., Professor of Ophthalmology in the Jefferson Medical College of Philadelphia. pp. 475. Philadelphia: Lea Bros. & Co. 1887.

This treatise has passed through three editions in this country and four in England and is familiar to most medical students of recent years. It is a most excellent work for the purpose for which it is designed, but in the process of the compression of a large subject into a small space has suffered somewhat, as for instance, when the author entirely omits from his description of Blepharitis any mention of the causative influences of errors of refraction in this disease.

The Refraction of the Eye: A Manual for Students. By Gustavus Hartridge, F.R.C.S., with ninety-six illustrations. Third edition. pp. 240. Philadelphia: P. Blakiston, Son & Co. 1887.

Perhaps the best criticism we can make on this work is that the third edition has been called for within three years of its original publication. For a practical hand-book of refraction for students it is a most excellent work. Some chapters have been partly rewritten for this edition and the chapter on Retinoscopy has been notably improved.

A Practical Treatise on Diseases of the Eye. By Dr. Edouard Meyer, *Prof. à L'école Pratique de la Faculte de Medicine de Paris, etc.* Translated by Freeland Fergus, M.B., Ophthalmic Surgeon, Glasgow Royal Infirmary, etc., with two hundred and sixty-seven illustrations and three colored plates. pp. 647. Philadelphia: P. Blakiston, Son & Co. 1887.

This well-known hand-book of ophthalmology which was first published fifteen years ago, has now for the first time been translated into English. The work has passed through three French and four German editions and has besides been translated into Italian, Spanish, Polish, Russian, and Japanese. This book adds another to the already large number of excellent manuals in the treatment of diseases of the eye. The chapters to be especially commended are perhaps those treating of plastic operations about the lids which are carefully and clearly written and profusely illustrated. The colored plates are reproductions from Liebreich's well-known atlas.

Handbook for Young and Old Opticians. A concise and comprehensive treatise on the theory of the optical trade and its mechanical manipulations. By W. Bohne, Optician, with illustrations. 108 pp. New Orleans, La. 1888.

This book strives to teach the optician the theory and practise of his trade: how to test lenses, cut them, and set them in the frames; how to fit the frames to the face, and to modify the frames according to the use to which they are to be put; how to centre and decentre lenses, etc. Unfortunately, the majority of opticians are sadly in need of just this information. The book is judiciously written and covers its subject very well, and deserves a wide reading among the opticians, as it is the only work of the kind that we have seen. There are several appendices on various topics that could have been omitted without injury to the main work. In one of these the author's picturesque style comes prominently to the front, and affords some diversion after the more serious topics preceding, as the following quotation will show:

"A close observer of the facial expressions of different individuals will find the greatest variety in their delineation, based upon the direction of the axis of vision. In children, this axis is almost constantly parallel, producing the impression of thoughtlessness or of the childish, innocent look. With increasing intelligence, the eyes lose their parallelism by being fixed upon objects of investigation. All the affections of the mind are now manifested by certain motions and positions of the eyes, which become more convergent. The lurking look of the convict on trial, the watchful scrutiny of the over-suspicious, the piercing gaze of anger, the lustful look of the libertine, the rude gaze of the ruffian, and the fearful glare of the maniac, are all modifications of the same act, produced by an increasing convergency of the axis of the eyes."

— An International Congress of Dermatology is to be held in Paris in August, 1889, with Ricord as Honorary President.

THE BOSTON
Medical and Surgical Journal.

THURSDAY, JULY 12, 1888.

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VISCERAL DISEASE AND INSANITY.

ACCORDING to Spitzka in a recent communication on the subject,[1] diseases of the gastro-intestinal tract and the appended glands bear a far more important part in the causation of insanity than is usually admitted in text books on the subject. The existence of a so-called "sympathetic insanity" was acknowledged by the ancients; some modern authorities have denied it. Spitzka thinks that the reaction against the view held by the ancients has overstepped the bounds of truth. He cites cases where the visceral disorder and the mental state have clearly had the relation of cause and effect. The stomach is responsible for no little mental depression and alienation. There are, says Spitzka, patients in the practice of every physician, who are as bright and cheerful on peptonized milk as they are unhappy, wretched and tired of life, on fried potatoes and pork cutlets. Many a testy hypochondriac has no other discoverable cause for his mental disorder than a protracted gastric catarrh, and his mental state is a veritable barometer of the better or worse condition of his stomach.

The liver, erroneously regarded as related to melancholia by the ancients, sometimes appears to occupy an etiological relation to mental disorder. In a case referred to by De la Mettrie, the only lesion found after death was an hepatic abscess. Cyr, (as quoted by Spitzka), has reported a number of cases where attacks of hepatic colic were followed by a stupor which almost approached a coma in degree, and acute yellow atrophy of the liver is often accompanied by furious delirium.

Diseases of the peritoneum are exceptionally enumerated among the causes of mental disease, and Bergmann and Barry have published cases where such etiological connection seems to have existed.

Instances have been reported in which rectal disease (as hæmorrhoids, cancer, prolapsus), or rectal combined with gastric disease, has produced severe mental symptoms. "In one such case," says Spitzka, "there was abnormal narrowness of the rectum, and a radical cure followed dilatation of both sphincters." "In another, where the ingestion of hard meat infallibly provoked the attacks (of terror with impulsions to suicide), it was observed that very severe seizures were followed by a diarrhœa which the patient had come to regard as critical."

Cases of hysterical anorexia are cited as instances of a peculiar, perverted, mental condition, coming on about puberty, which, if not caused, is, at least, intensified and modified by the state of the stomach. "A patient of this class develops a slight dyspepsia, and rendered morbidly sensitive by the existing predisposition to nervous disease usually present in the families of such patients, and doubly so by pubescence, she contracts a positive dislike for food. Improper food causes distress, the tonics, appetizing cordials, and chalybeates with which a mistaken therapeusis drenches her, aggravate the trouble, and dislike is metamorphosed into a belief that food is injurious. All the patient's energies are devoted to the end of resisting the introduction of food, and the morbid concentration on self ultimately leads to the development of a full-blown delusion that God has forbidden her to eat. Meanwhile, the stomach, originally, perhaps, but very slightly diseased, ceases to present any signs of gastric catarrh, yet the patient does not resume eating, but goes on living for months and months on an occasional sip of water, tea, or broth, and is visited by crowds of the marvel-loving majority as a so-called 'fasting girl.'"

Much interest attaches to the influence of intestinal parasites on insanity. "That these," says Spitzka, "are competent to provoke a variety of nervous troubles, such as chorea, eclampsia, and epilepsy, is well known; but that there are well-established cases in which actual insanity ensued, is ignored by the majority of recent writers. The rapid cure of the mental disorder following the expulsion of the parasites is the significant proof that the etiological assignment was correct."

The clinical characteristic of insanity due to chronic disease of the digestive tract is depression, but this depression has rarely the emotional depth of typical melancholia. The true melancholic, says Spitzka, is horrified at life, the dyspeptic melancholic is disgusted with it.

Another characteristic of the mental disturbance due to visceral disease is its rapid change in remarkable parallelism with the somatic state.

But the operation of visceral disease in the production of mental disease, Spitzka thinks, is extremely limited if not nearly *nil*, in persons of previously sound mental health and sound antecedents. But it plays an important rôle as an exciting cause in many neurasthenic and hereditarily predisposed patients. Proper attention to the somatic disturbance is often, therefore, attended by results which strike the patient as magical. The relief of a gastric catarrh causes the

[1] Medical and Surgical Reporter, June 30, 1888.

disappearance of anxious terrors; a constipation, of morbid fears; the expulsion of worms, of a distressing convulsive or maniacal disaster.

TREATMENT OF CHRONIC DIARRHŒA.

Debove in a recent communication to the Medical Society of the Hospitals, claims great success in the treatment of chronic diarrhœa, especially the tuberculous form, generally so little amenable to therapeutic agents, by silicate of magnesia. This remedy he administers in massive doses, half an ounce to an ounce and a half a day suspended in a quart of milk. As a result of this treatment the diarrhœa disappears completely, and give place to an obstinate constipation.

The silicate of magnesia is known under the name of *talc* or *steatite*. The powder of talc is insoluble, inert, and has not heretofore been supposed to have any medicinal properties whatever. According to Debove, it has sedative properties on the digestive tube similar to those of bismuth, than which it is safer — it promotes the healing of intestinal ulcerations, but seems only to be efficacious by its presence in massive quantities. This substance, Debove says, is readily and rapidly eliminated from the intestines.

MEDICAL NOTES.

— The United States Marine Hospital Service in a bulletin, under date of July 6th, announces, that about the middle of June yellow fever reappeared at Plant City, Florida, and there was one death therefrom, June 22d. Another case in the vicinity, four miles and a half from Plant City, died on the 26th. There have been several mild cases in the village, which contains less than 300 inhabitants, but for the present trains will not stop at Plant City, and it is understood that mails will be delivered at Cork Post Office, five miles west of Plant City. In the meantime, by direction of the Governor, the most active measures are being taken by the president of the county board of health, Dr. J. P. Wall.

— A correspondent writes feelingly to the *New England Medical Journal* of the difference in the facilities for performing operations in city and country. He says: "These men, teaching in the great hospitals here, are great men and great teachers, and far be it from me to take one jot or tittle from their merited honor, but oh, how great are their opportunities! If a big operation is to be done in New York, the surgeon can familiarize himself with the parts by immediate dissection. He is supported by able counsel, aided by trained assistants, and last, but by no means least, he goes into the operation without feeling, if his patient die, he will be looked upon as a sort of semi-murderer; for, if an unfortunate result follow, it is quickly forgotten in the hurry and innumerable death-rate of the great city. But with us, how different! A great emergency arises — a serious operation must be done immediately, and, at best, one can rarely obtain more than one professional assistant. Oft-times the assistant will be a common laborer, the best light obtainable a pine-torch or a kerosene lamp minus a chimney, and with a paucity of instruments, because too poor to buy a complete outfit, the surgeon gropes his way through delicate tissues till the work is done and the life of his patient is saved. I recall to mind now a case of successful laparotomy done for gun-shot wound of the abdomen, and reported at the last meeting of our medical society, in which I am reliably informed the operator had only the assistance of a negro field-hand, and worked solely by the light of a pine-torch."

NEW YORK.

— The Board of Health on the 29th of June, appointed forty-one physicians on the special summer service of the Department, which went into operation on the 5th of July. They are engaged for two months at a salary of $100 per month, and each physician is expected to spend at least eight hours a day in visiting the tenement-houses of his district. This work is under the direction and supervision of Dr. Moreau Morris.

— On the 5th of July, Sanitary Superintendent Day, sent to the Board of Health a list of twelve tenement and lodging-houses on Mulberry Street, which are overcrowded in violation of law requiring that there shall be at least 600 cubic feet for each occupant; and the Board decided to at once notify the lessees of the tenements mentioned to make the requisite reduction of inmates within five days. It is a misdemeanor to violate the provisions of the law against overcrowding, and the offenders may be punished by both fine and imprisonment. The lessees are also liable, in a civil suit, to a fine of $10 per day for each day that the overcrowding continues.

— The fifteenth National Conference of Charities and Corrections commenced its Sessions at Buffalo, on July 5th, when the President's address was delivered by Dr. Charles S. Hoyt, Secretary of the New York State Board of Charities. In it the subject of insanity as related to pauperism received extended attention, under the heads of dependence induced by insanity, the elimination of certain insane poor institutions, and immigration and intemperance as sources of pauperism and crime. He expressed the opinion that European countries had been systematically sending paupers and criminals to America, and as a preventive, recommended the examination of immigrants by our counsels and commercial agents abroad, the revision of the Federal immigration law, and its enforcement to prevent the landing of all such paupers and criminals.

— The faculty of the New York Polyclinic have decided to increase the clinical facilities of this institution by establishing a spacious hospital, immediately connected with the College building. It will be opened for the reception of patients in October next.

Miscellany.

PETTENKOFER AND CHOLERA.

THE *Sanitary Engineer* for July 7th, contains the following excellent criticism on Pettenkofer's last cholera report:

"Under certain conditions of disease, or under the influence of certain drugs, all objects appear to the eye as if seen through yellow or green spectacles. Usually this abnormal vision is only a temporary matter, and soon passes off, but there are cases in which the person never sees colors as others do, and is, therefore, said to be color-blind. It is, of course, not easy to convince a color-blind person that it is his vision that is abnormal, and not other people. The same is the case with regard to other modes of action of nerve-tissue, and especially in mental operations.

"No more striking illustration of this can probably be found than the teachings during the last ten years of Professor von Pettenkofer, of Munich, with regard to the modes of propagation of cholera. Here is a man who has done excellent scientific work, has made elaborate investigations, devised new apparatus, performed complicated and difficult experiments, and is everywhere recognized as a leader in sanitary science, but whose praises, even from his own pupils, are always qualified by the remark: 'But he is cranky about cholera.' He has just published an elaborate review of the epidemiological part of the report of the German Commission on Cholera, from which it appears that his view is the same that it was twenty years ago, that he does not believe that cholera is due to a micro-organism, nor that it is spread by drinking-water, nor that it is any way contagious. His review makes a handsome, large, octavo volume, it is ingenious and interesting, but it is the brief of an advocate who is on the wrong side. . . . It is still best to assume that cholera is spread by a living organism through the discharges of the sick; that when it is epidemic it is usually through an infected water-supply, and that it may be prevented, or its spread in a place stopped, by attending to the prevention of the entrance into a country of persons suffering from the disease, by disinfection of baggage, bedding, excreta, etc., and by special attention to the purity of the water-supply."

PRACTICAL HINTS ABOUT CHILDREN.

DR. JACOBI gives in the *Archives of Pediatrics* the following suggestive hints about the management of children. "Always teach a nurse that a child cannot swallow as long as the spoon is between the teeth; that it is advisable to depress the tongue a brief moment, and withdraw the spoon at once, and that now and then a momentary compression of the nose is a good adjuvant. Syrup will turn sour in warm weather, glycerine and saccharine keep. The taste of quinine is corrected by coffee, chocolate and 'elixir simplex.' Powders must be thoroughly moistened; unless they be so, the powder adhering to the fauces is apt to produce vomiting. Inunctions require a clean surface, and are best made where the epidermis is thin and the net of lymph-ducts very extensive on the inner aspect of the forearm and the thigh. Babies after having taken opiates for some time, demand larger, and sometimes quite large doses to yield a sufficient effect. Febrifuges and cardiac tonics, such as quinia, antipyrin, digitalis, strophanthus, sparteine, convallaria, etc., are tolerated and demanded by infants and children in larger doses than the ages of the patients would appear to justify. Mercurials effect the gums very much less in young than in advanced age. The rectum of the young is straight, the sacrum but little concave, the sphincter ani feeble, and self-control gets developed but gradually; for these reasons a rectal injection is either allowed to flow out or is vehemently expelled. Therefore one which is expected to be retained must not irritate. The blandest and mildest is a solution of six or seven parts of chloride of sodium in a thousand parts of water, which serves as a good vehicle for medicine unless incompatible with the latter. The injection must be made while the child is lying on its side (preferably the left side) not on the belly over the lap of the nurse, for in this position the space inside the narrow infantile pelvis is reduced almost to nothing. In many cases of intense intestinal catarrh, large and hot (104° to 108° F.) enemata will relieve the irritability of the bowels and contribute to recovery. They must be repeated several times daily. When there are many stools, and these complicated with tenesmus, an injection, tepid or hot, must or may be made after every defæcation, and will speedily relieve the tenesmus."

ECTOCARDIA CURED BY A PLASTIC OPERATION.

PROFESSOR LANNELONGUE, of Paris, recently presented to the Académie des Sciences a very remarkable case of deformity of the chest-wall, with ectopia of the heart, which he had dealt with successfully by operation, and which we find described in the *British Medical Journal*, May 26th: The patient was a female child, six days old, well formed in every part, except the thorax. On the front of the chest, over the middle of the sternum, there was a circular ulcer, rather larger than a franc-piece, the base being formed by a yellowish membrane, which appeared to be becoming gangrenous. It was already detached from the edges of the ulcer at several points, and thus only imperfectly closed the aperture into the chest. Each beat of the heart pushed it forwards, and on applying the finger during systole, the hardening of the ventricular walls as they contracted could be distinctly felt. The inner ends of the clavicle articulated below with the first rib, and appeared to be free internally and above: the sternum was entirely wanting between them. This gap in the osseous wall of the chest extended downwards in the middle line, the sternum appearing to be represented on each side only by a narrow strip of bone running downwards and obliquely inwards, and finally joining the corresponding piece below the median ulcer already referred to. The deficiency in the bony chest-wall was, therefore, of the shape of an isoceles triangle, the apex being below at the ensiform cartilage, and the base above at a line joining the inner ends of the two clavicles. The side of the triangle measured four, and the base three centimeters. The circular ulcer was, as it were, inscribed in this triangle. On inspiration, the chest-wall corresponding to the malformed part of the skeleton was drawn in, so that a hollow half-an-inch deep was formed at the upper part; in expiration, on

the other hand, it bulged markedly forward. A few days after the little patient was first seen, the remains of the "obturator" membrane at the bottom of the ulcer disappeared; the pericardium was seen to be entirely wanting; the apex of the heart projected outside the chest, and the whole anterior surface of the ventricles was exposed. The hole in the skin became gradually smaller, owing to the formation of large, fleshy granulations, which pressed on the apex and ventricles of the heart, and it was obvious that immediate surgical interference was necessary to prevent most serious disturbances of the circulation. M. Lannelongue, therefore, made two vertical incisions on each side, one and one-half centimeter to the outer side of the ulcer; the flaps thus formed were sufficiently loosened to allow of their internal edges being brought together over the opening in the chest-wall, where they were fixed by three hair sutures. Only a few drops of blood were lost; the operation was not followed by any constitutional disturbance, and the wound was entirely healed in twenty days. Two months after the operation the child was in perfect health. M. Lannelongue points out that in this way he transformed the case from one of "ectocardia" into one of "subcutaneous ectopia." He thinks it possible that the ectopia, which is at present extrathoracic, may in time, as the heart develops, become intra thoracic. Professor Verneuil, in presenting M. Lannelongue's communication to the Academy, remarked that this was the first time such a procedure had ever been attempted.

OVARIOTOMY AND MARRIAGE.

AT a recent meeting of the British Gynæcological Society the question was discussed by Mr. Lawson Tait and others of the effect on the sexual instinct of the removal of the ovaries and testicles, and of the nubility of persons who have lost those organs, contrary to what might be supposed, that question seems to be not perfectly clear. The *Medical Press and Circular*, commenting on the discussion, says that it has always been assumed in the case both of women and of men — and especially in the latter — that the removal of organs so essential to the carrying out of the sexual act in its integrity, is attended with loss of the desire for a function which no longer admits of being performed properly. The belief, however, is one of those which has been handed down as a tradition and re-edited without being put to the test of experience, an experience which for many reasons is best carried out on a third party. This lapsus Mr. Tait has done something towards rectifying. After diligent search, however, he has only been enabled to discover one adult man whose testicles had both been removed, and in this particular case, it is satisfactory to learn that after a period of depression, both the desire and the ability for sexual intercourse have returned in their plenitude, although even Mr. Tait, probably, would not expect such intercourse to be fertile. As regards women, the prevalence of operation for removal of the ovaries permits of the fullest and most conclusive information. Not only does removal of the appendages not destroy the appetite, but in certain cases it even seemed to increase it, a result possibly less desirable than its abolition. Even when the uterus, as well as the appendages, were removed from virgins, married life does not appear to have been other than satisfactory. The inquiries, however, suggest another question, possibly of more practical interest, and that is as to the legal status, as regards marriage, of women without ovaries and men without testicles. As concerns the latter, the deficiency is one which it would not be easy to conceal or explain, but women may and do marry without the husband being necessarily aware of the hiatus in the anatomical arrangements of his better half. A marriage contracted under such circumstances would from any point of view be immoral, and contrary to public policy, and when one of the parties to the contract is left in ignorance of the facts of the case it becomes a fraud of the most cruel description. Moreover, except with the assistance of the surgeon who was instrumental in removing the superfluous organs, it would be difficult for the outraged husband to prove his case, should he be tempted to resort to the law to relieve him of a mutilated and infertile conjoint. In years gone by the question was one which might well be left to the debating societies to discuss, but in view of the extension which the practice of extirpating ovaries has taken of late years, it becomes one of practical interest. If it be hard on the man to give him a wife minus her appendages, it is adding insult to injury to give him for a wife a woman who has not even a uterus to call her own. Yet Mr. Tait was enabled to record the cases of three young women, wombless and appendageless, who had subsequently reported favorably on the matrimonial condition. Where the operation in the case of either conjoint has been performed subsequently to marriage, no difficulty occurs, since each party to the contract has solemnly consented to accept the other for better or worse, but just as lepers are only permitted to marry *inter se*, so the only fit spouse for the woman without ovaries would be the man without testicles.

THE WEAR AND TEAR OF THE MEDICAL PROFESSION.

AN interesting abstract of the recent report by Dr. J. H. Rauch of Illinois, on "the Wear and Tear of the Medical Profession" is given in *Science*.

The author finds that the previously reported favorable statistics on this point have been largely based on obituaries of the more eminent men who achieved marked professional success, and had reference very largely to city physicians, and of the men who, in the smaller towns, are in a position to select their practice and adjust their labors with some regard to regular hours of sleep, meals and relaxation. Comfortably housed at home, properly protected from the weather when making visits, free from the harrassing cares of the *res angustæ domi*, and beyond the torturing anxiety which too often besets the struggle for practice, — the conditions of life in these cases are undoubtedly favorable to longevity. But these are the fortunate few, who bear no more numerical relation to the rank and file of the profession than the general officers do to the rank and file of an army.

Compared with these biograpical subjects, upon whose length of honorable and successful years is predicated the assertion that the wear and tear of the profession does not prevent its members from attaining a high average longevity — compared with these,

Dr. Rauch has, as the result of an extensive correspondence and systematic record, obtained data which show that the average age at death (in Illinois, at least) is not much over fifty-two years; and that only about eleven instead of thirty-five in every one hundred attain the scriptural limit of threescore years and ten.

An examination of the tables shows, that while the death-rate of physicians in Illinois for the first few years after entering upon the practice of medicine is lower than that of all males in Illinois, and greatly less than that of the whole population of the country at large, it increases beyond that of the former class during the decade from forty to fifty, and is greater than that of the latter class in the next decade.

The obvious inference is, that physicians, on entering practice, form a class of selected lives, since they have an advantage of nearly 3 per cent. as compared with all males at the same ages, — that is, from 24 to 40, — and of over 50 per cent. as compared with the total population, both sexes, at the same ages; this latter great disparity being no doubt largely due to the casualties among women during the child-bearing period. As the wear and tear of practice begins to tell, this advantage is soon lost; so that during the period from 30 to 70 the death-rate of physicians is 8 per cent. greater than that of all males, and during the period from 40 to 70 it is more than 11 per cent. greater than that of both sexes.

An examination of the causes of death reveals the result of the exposure, irregular hours, broken rest, and mental anxiety which are the lot of the average practitioner.

In the grouped causes of death it is seen that consumption, diseases of the respiratory organs (including 91 from pneumonia), and Bright's disease caused 268 deaths, or more than one-fourth of the total. If to these be added a share of the deaths from diseases of the heart, — the *sequelæ* of rheumatism, — a fair estimate may be made of the effect of exposure to the vicissitudes of weather upon the wear and tear of medical life. As a result of mental strain and anxiety, of insufficient, irregular, and interrupted sleep, and similar causes, is the total of deaths from diseases of the brain and nervous system, embracing 43 from various forms of paralysis. In the group of zymotic diseases (enteric fever given separately) there were 5 deaths from diptheria, 1 each from small-pox and yellow-fever, and 8 from traumatic infection (septi cæmia, etc.), all contracted from attendance upon patients.

Less creditable to the *morale* of the profession are the 18 deaths from over-doses of opiates and narcotics, the 7 admitted suicides, and the deaths from alcholism, direct and indirect, — 12 of the former, and at least 8 of the latter. There is this to be said, however, in this connection: that the proportion of mortality from these causes is steadily diminishing; and observation shows that this diminution is largely the result of an amelioration of the conditions, especially of country practice, due to better roads and methods of locomotion, increased comfort in living, and less physical strain upon the practitioner. Ten years ago the resort to stimulants upon exposure to the weather, and under the harsher conditions of practice which then obtained, was much more common than it is to-day. And this is also true of the use of opiates and hypnotics. The practitioner, familiar with their power to temporarily stimulate to further endurance, or to produce sleep when nervous and exhausted, had formerly greater temptation to resort to the use of these agents, always ready to hand.

Correspondence.

ON THORACIC DEFORMITY PRODUCED BY ADENOID GROWTHS IN UPPER PHARYNX.

PARIS, June 15, 1888.

MR. EDITOR,— In my book on "Adenoid Growths of the Nasal Pharynx,"[1] I described a peculiar deformity of the chest originating in early childhood, and I attributed its origin to the existence of these tumors. In such cases the thorax is flattened and the sternal ribs, as well as the inferior part of the sternum, are sunken in, whilst their cartilages on the contrary are bulged outwards. As long ago as in 1828, Dupuytren, and in 1843, Robert, another great French surgeon — had mentioned a very similar deformity of the chest, which both ascribed to hypertrophy of the tonsils, thus committing a very excusable mistake indeed, as these authors have not had any knowledge of the existence of adenoid pharyngeal vegetations. These have indeed been discovered much later, and one of the first cases of growths of this nature has been given in a paper of mine, published in 1865 as well as in the well known publications of Czermak and of Voltalini. A circumstance which renders this error the most comprehensible is the one of adenoid growths generally coexisting with hypertrophical tonsils. Notwithstanding his ignoring the said facts, Dupuytren, with great sagacity, had already noticed a gap in the connection between enlarged tonsils and deformity of the thorax, for he had observed that this and other consequences attributed to the hypertrophy of these glands did not disappear in certain cases after tonsillotomy.

In my above-quoted book, I, the first, revealed the real origin of the said thoracic deformity and I explained it by a theory which may be summed up briefly in the following manner: Adenoid growths begin to form in early childhood. When arrived at a certain size, they fill up the nasal pharynx, close the nose from behind and intercept the passage of air through it. Thus the patient finds himself compelled to change the natural nasal respiration for that through the mouth. However, the children do not adopt the latter mode at once, but take to breathing occasionally through the nose, especially when asleep, and when, therefore, the control of will is wanting. Air under those circumstances not arriving through the nose at all or at least not in sufficient quantity, the action of the diaphragm and of the intercostal muscles during inspiration causes the thorax to sink in, for the atmospheric pressure on its outer walls is then superior to the interior one, and besides the lungs are known to have a natural tendency to contract. It is easy to understand that, under these circumstances, the ribs and the intercostal spaces sink in, but it is more difficult to comprehend the bulging of the costal cartilages. I have explained this phenomenon in the following manner.[2] By the giving way of their two points of insertion, namely, the ribs and the sternum, *these cartilages are compressed laterally* and therefore compelled to vault outwards. Now as the skeleton easily undergoes deformity in early childhood, these alterations finally become lasting.

These remarks cannot well have failed to attract the notice of the profession in England and in America, as my book has been twice translated into English. First a full translation by Dr. Macnaughton Jones (then Professor in Green's University, Ireland, now in London) has appeared in 1879 in the *Medical Press and Circular*. Then my late lamented friend, Dr. James G. Cassells, from Glas-

[1] B. Loewenberg. Les tumeurs adénoïdes du Pharynx nasal, etc., Paris, 1878. Published first in the Gazette des Hôpitaux, and printed separately in 1879.

[2] See transactions of the International Medical Congress, III, 236.

gow, has published an abridged translation in the *Edinburgh Medical Journal* in 1879 (April to August) and he treats this special point (*ibidem* pp. 1100 and 1101). Furthermore, an exhaustive abstract has appeared in the *American Otological Journal* (Vol. I, No. 2, April, 1879).

On a later occasion, I again took up the same subject and entered into further particulars in my introductory address on "Adenoid Growths," delivered at the Seventh International Medical Congress (London, 1881) and reproduced in *extenso* in the transactions of this meeting (Vol. III, pp. 283–290. See this especial point on pp. 285 and 286).

Considering all the preceding facts, I have been rather surprised to find the discovery of the real origin of this deformity attributed to M. Chatellier by Dr. Hooper in a paper "On Adenoid Vegetations in Children," published in this periodical (March 15, 1888). In his inaugural dissertation, "Des tumeurs adénoïdes du Pharynx," (Paris, 1886), Dr. Chatellier when coming to this subject, precisely quotes my remarks on the etiology of the deformity which are anterior by eight years to his pamphlet (see his paper, p. 571).

I am fully convinced that the above-quoted remarks, which largely prove my anterior claims, have been merely overlooked by Dr. Hooper whom I wish to thank, particularly for his kindly sending me his paper. In setting right this point I therefore claim my priority before the profession of the United States where I count so many distinguished friends.

I finally wish to avail myself of this opportunity and just mention that the *cutting forceps* figured in Dr. Hooper's paper (page 12 of the pamphlet) is, in fact, only a slight modification of the one I have described and drawn in 1878 in the *Gazette des Hôpitaux* and in my book in 1879 (page 67). The difference consists merely in the prolongation of the cutting ends, modified first by my learned friend Dr. Woakes, from London, and successfully by others. Respectfully yours, DR. B. LOEWENBERG.

REPORTED MORTALITY FOR THE WEEK ENDING JUNE 30, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	1038	377	34.74	6.48	24.03	4.59	2.79
Philadelphia	1,016,758	536	281	26.60	10.45	19.57	2.09	.95
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	232	96	34.86	3.36	26.24	4.62	—
Baltimore	437,155	284	168	40.25	4.20	36.40	.35	—
Boston	407,024	183	61	15.95	9.90	3.85	7.15	—
Cincinnati	325,000	163	—	22.57	7.32	19.52	—	—
New Orleans	245,000	120	46	21.58	14.11	12.45	3.32	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	125	78	36.80	6.40	28.00	.80	—
Pittsburgh	210,000	119	71	34.40	7.74	28.38	.86	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	21	10	23.80	14 28	14.28	—	—
Charleston	60,145	34	12	14.70	14.70	5.88	—	—
Portland	40,000	6	1	—	50.00	—	—	—
Worcester	76,328	27	12	25.90	18.50	—	22.20	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	22	6	9.10	27.30	—	9.10	—
Fall River	61,203	35	24	34.32	—	20.02	—	11.44
Lynn	51,467	7	0	28.56	57.12	14.28	—	—
Lawrence	40,175	12	5	16.66	—	—	—	8.33
Springfield	39,952	19	5	36.82	5.26	22.04	5.26	—
New Bedford	36,298	15	6	20.00	—	20.00	—	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	11	3	27.27	9.09	—	9.09	—
Salem	28,781	3	1	—	33.33	—	—	—
Chelsea	27,552	5	1	—	20.00	—	—	—
Haverhill	24,979	6	0	16.66	33.33	—	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	4	0	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	5	1	—	20.00	—	—	—
Malden	18,932	—	—	—	—	—	—	—
Fitchburg	17,534	11	3	—	9.09	—	—	—
Waltham	16,651	1	0	—	—	—	—	—
Newburyport	13,239	4	0	—	25.00	—	—	—
Northampton	13,419	3	0					

Deaths reported 3,051: under five years of age 1,468; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 963, consumption 245, acute lung diseases 141, diarrhœal diseases 668, diphtheria and croup 105, scarlet fever 40, measles 33, typhoid fever 32, whooping-cough 27, malarial fever 25, cerebro-spinal meningitis 21, puerperal fever five, erysipelas four, small-pox three. From measles, New York 23, Baltimore three, Philadelphia, St. Louis, Boston, Pittsburgh, Charleston, Fall River and Lawrence one each. From typhoid fever, Philadelphia 12, Baltimore and Washington four each, New York three, Boston, Pittsburgh and Holyoke two each, Cincinnati, New Orleans and Lawrence one each. From whooping-cough, New York 15, Philadelphia and Boston three each, Baltimore, Cincinnati, New Orleans, Washington, Pittsburgh and Nashville one each. From malarial fever, New York seven, New Orleans five, St. Louis four, Philadelphia three, Baltimore and Charleston two each, Cincinnati and Nashville one each. From cerebro-spinal meningitis, New York six, St. Louis and Washington three each, Boston, Pittsburgh and Springfield two each, Cincinnati, Worcester and Lynn one each. From puerperal fever, St. Louis and Washington two each, Cincinnati one. From erysipelas, New York two, Boston and Haverhill one each. From small-pox, Philadelphia two, New York one.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending June 16th, the death-rate was 16.2. Deaths reported 2,923: infants under one year of age 612; whooping-cough 89, diarrhœa 45, scarlet fever 38, measles 30, diphtheria 25, fevers 19, small-pox (Preston six, Sheffield and Hull two each, Bristol, Manchester and Leeds one each), 13.

The death-rates ranged from 9.9 in Birkenhead to 27.9 in Manchester: Birmingham 14.0; Bradford 17.5; Halifax 23.4; Hull 17.0; Leeds 18.0; Leicester 10.7; Liverpool 15.7; London 14.2; Nottingham 19.4; Portsmouth 16.8; Sheffield 15.6.

In Edinburgh 19.7; Glasgow 24.0; Dublin 24.7.

The meteorological record for the week ending June 30, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, June 30, 1888.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, ...24	29.79	66.0	78.0	57.0	82.0	85.0	97.0	88.0	W.	N.E.	E.	2	12	8	O.	O.	O.		
Monday, ..25	29.75	63.0	70.0	56.0	94.0	87.0	86.0	89.0	N.E.	E.	S.W.	5	8	10	O.	C.	C.		
Tuesday, ..26	29.76	68.0	81.0	65.0	68.0	85.0	92.0	82.0	W.	N.	S.W.	6	6	5	O.	R.	O.		.01
Wednes,...27	29.98	69.0	77.0	62.0	65.0	40.0	55.0	53.0	N.W.	N.W	N.	18	22	9	C.	C.	C.		.53
Thursday, 28	30.23	56.0	68.0	54.0	67.0	74.0	76.0	72.0	E.	E.	E.	24	18	16	O.	O.	O.		
Friday, ...29	30.10	57.0	60.0	53.0	79.0	72.0	75.0	75.0	N.E.	E.	S.	12	10	6	O.	C.	C.		.02
Saturday, .30	29.81	68.0	80.0	55.0	63.0	55.0	69.0	62.0	W.	W.	N.W.	12	18	29	C.	F.	R.		.39
Mean, the Week.	29.92		73.0	58.				74.0											.96

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 30, 1888, TO JULY 6, 1888.

BAXTER, J. H., colonel and chief medical purveyor. Will proceed to New York City on public business connected with the Medical Department, and on completion thereof will return to his station in Washington City. S. O. 150, A. G. O., June 29, 1888.

BENTLEY, EDWIN, major and surgeon. Retired from active service July 3, 1888, by operation of law. S. O. 153, A. G. O., July 3, 1888.

JOHNSON, RICHARD W., captain and assistant surgeon. Designated as medical officer for a camp of instruction in rifle practice to be established at Fisher's Island, N. Y., (near New London, Conn.), on the 2d of July, 1888, and to continue during the months of July, August and September; and ordered to proceed to Fisher's Island in proper season and report to the commanding officer for duty. S. O. 131, Division of the Atlantic, June 28, 1888.

CROSBY, WM. D., first lieutenant and assistant surgeon. Leave of absence extended one month. Paragraph 8, S. O. 151, A. G. O., June 30, 1888.

CLENDENIN, PAUL, first lieutenant and assistant surgeon. Leave of absence granted in S. O. 55, Department of Texas, June 4, 1888, extended one month. S. O. 149, A. G. O., June 28, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JULY 7, 1888.

CRANDALL, R. P., assistant surgeon. Detached from the United States Steamship "Saratoga" and to the United States Steamship "Galena."

PECK, GEORGE, medical director. Placed on retired list, 9th inst.

BOOKS AND PAMPHLETS RECEIVED.

Fifteenth Annual Report of the Board of Health of the city of New Haven, 1887.

McGill University, Annual Calendar. Faculty of Medicine. Fifty-Sixth Session, 1888–89. Montreal, 1888.

Effects of Food Preservatives on the Action of Diastase Pancreatic Extract and Pepsin. By Henry Leffmann, M.D., and William Beam, M.A.

The Medico-Legal Treatment of Common Inebriates. By L. W. Baker, M.D., Superintendent Family Home for Nervous Invalids, Baldwinville, Mass. Reprint.

Annual Catalogue of Roger Williams University, Nashville, Tenn. 1887–88.

Partial Syllabic Lists of the Clinical Morphologies of the Blood, Sputum, Feces, Skin, Urine, Vomitus, Foods, including Potable Waters, Ice and the Air, and the Clothing (after Salisbury). By Ephraim Cutter, M.D. Harvard and University of Pennsylvania, A.M. Yale, LL.D. Iowa, Hon. F. S. Sc. (London), etc. New York, 1888.

The Annual Report of the Department for the Insane of the Pennsylvania Hospital, for the year ending fourth month 21st, 1888. Philadelphia, 1888.

Catalogue of the Albany Medical College, Medical Department of Union University. Fifty-Seventh Session, 1887–88, and Announcement for Session, 1888–89.

Woman's Medical College of the New York Infirmary. Twentieth Annual Catalogue and Announcement. June, 1888.

Forty-Second Annual Announcement of Starling Medical College, together with Catalogue and Order of College and Hospital Exercises for the Session of 1888–89. Columbus, Ohio.

Enquete sur les Habitations Ouvrières de la Province de Brabant. Papport de M. Le Docteur E. Janssens. Bruxelles, 1888.

Cocaine Dosage and Cocaine Addiction: also Cocaine Toxæmia. By J. B. Mattison, M.D., Brooklyn, New York. Reprint. 1888.

Catalogue of the Alumni, from 1834 to 1889, of the Medical Department of the Tulane University of Louisiana, with an Introductory Historical Sketch, etc. New Orleans, 1888.

Anæsthetics; Their Uses and Administration. By Dudley Wilmot Buxton, M.D., B.S., Administrator of Anæsthetics in University College Hospital. Philadelphia: P. Blakiston, Son & Co.

The Principles of Cancer and Tumor Formation. By W. Roger Williams, F.R.C.S., Surgical Registrar to the Middlesex Hospital, Surgeon to the Western General Dispensary. London: John Bale & Sons. 1888.

The Applied Anatomy of the Nervous System. Being a Study of this Portion of the Human Body from a Standpoint of its General Interest and Practical Utility in Diagnosis; Designed for use as a text-book and a book of general reference. By Ambrose L. Ranney, A.M., M.D., Professor of the Anatomy and Physiology of the Nervous System in the New York Post-Graduate Medical School and Hospital, etc. Second edition. Rewritten, enlarged and profusely illustrated. New York: D. Appleton & Co. 1888.

The Milray Lectures: On Epidemic Influences; On the Aspects of Yellow Fever; On the Epidemiological Aspects of Cholera. By Robert Lawson, LL.D., Inspector General of Hospitals, etc. London: J. & A. Churchill. 1888.

The Intubation of the Larynx. By F. E. Waxham, M.D., Professor of Otology, Rhinology and Laryngology, College of Physicians and Surgeons, Chicago; Clinical Professor of Laryngology and Rhinology, Chicago Ophthalmic College. Illustrated with forty-five engravings, including plates fully describing the operation. Chicago: Chas. Truax & Co.

A Manual of the Operations of Surgery for the Use of Senior Students, House Surgeons and Junior Practitioners. Illustrated by Joseph Bell, M.D., F.R.C.S., Edinburgh, Consulting Surgeon to the Royal Infirmary, etc. Sixth edition. Revised and enlarged. Edinburgh: Oliver & Boyd. 1888.

The Pathology, Diagnosis and Treatment of the Diseases of Women. By Grailly Hewitt, M.D., F.R.C.P., Professor of Midwifery and Diseases of Women, University College and Obstetric Physician to the College, etc. A new American from the fourth revised and enlarged London edition, with 236 illustrations. Edited with notes and additions by H. Marion Sims, M.D., New York. Three volumes. New York: E. B. Treat.

Original Articles.

AN EPIDEMIC OF TYPHOID FEVER DUE TO INFECTED MILK.

BY CHARLES HARRINGTON, M. D.
Instructor in Hygiene and Assistant in Chemistry in the Harvard Medical School.

THE epidemic about to be described occurred in November and December, 1886, in the city of Cambridge, Mass., and was investigated by Dr. Alfred F. Holt, for the Board of Health of that city, and by Dr. Henry Jackson and myself, on behalf of the State Board of Health, shortly after the outbreak. The results of our investigations at that time were reported to the State Board, and an account of the epidemic was read by me at the February meeting of the Boston Society of Medical Sciences, but publication in this form has been deferred until now with the hope that further examination might yield additional facts regarding the cause. For the account of the epidemic as it occurred, I wish to acknowledge my indebtedness to Dr. Holt, who made the preliminary inquiry.

Up to the middle of November, there was no more than the usual amount of typhoid in the city; but, beginning on the 18th, the number of cases reported to the local Board of Health was so large as to occasion considerable surprise. Between November 18th and December 2d, sixty-three cases were reported, an average of more than four per day; between December 2d and 31st, ten more were reported, making seventy-three in all. These cases were not confined to a limited area, but were widely scattered here and there throughout that portion of the city known as the Port. It was naturally supposed that the unusual number of cases must have to a certain extent a common cause, but a consideration of the various supposed causes of such outbreaks failed at first to throw any light upon the subject. The water-supply being the same for the whole city, it could hardly be looked upon as the cause of an epidemic confined chiefly to one section. The sewerage also was manifestly not at fault. The probability of infected milk as a carrier of the disease was regarded as very small owing to the fact that the territory invaded was much larger than is usually supplied by a single milk-route.

On making a house-to-house inquiry, however, it was learned that in spite of the wideness of the affected area most of the cases occurred among the patrons of a particular milk-man. Fifty-eight of the seventy-three cases occurred in thirty-six families who obtained their milk from this source. It was also learned that most of these cases were of persons who were in the habit of drinking uncooked milk. The cases which occurred outside this milk-route were not much in excess of the number usually occurring at that time of the year.

It was learned on inquiry as to the source of the milk supplied by this man, that it came through one of the large contractors from five farms in Suncook and Hooksett, N. H. Samples of the milk from each of these farms were taken from the milk-car on its arrival, and were examined chemically for adulteration by addition of water. The analyses made by the writer showed no adulteration, but, of course, this examination could throw no light on the character of previous consignments, though it is fair to suppose that as the farmers were in ignorance of the intended examinations of that particular day, the quality of the milk was about as usual. It was then thought advisable that the five farms should be inspected, and on behalf of the State Board of Health, Dr. Jackson and myself, accompanied by Inspector Terry, visited them on January 4th, to make the necessary examinations. Samples of the milk and of the water-supply of each farm were taken for chemical and biological examination; the results of these examinations will be found tabulated below.

The first farm visited was that of a Mr. Howe. Here were found sixteen cows in good condition, housed in a fairly good barn, which, with the other outbuildings, were in good order. The water-supply was running water conducted through an iron pipe from a spring seventy-five rods away. There was no history of sickness among the family or help. At the Morgan farm the stock and buildings were in good condition. The pump was in the barn cellar, which was to a considerable extent covered with cow-manure. Several head of stock were loosely confined in this cellar. There was no history of sickness. At the Sullivan farm everything was found to be clean and carefully kept. The water comes from a spring in the woods a hundred rods distant, through an iron pipe. At the Whittemore farm the cows looked thin and in poor condition. The cow-stable and other outbuildings did not appear well-kept, and there was a general air of slovenliness about the whole place. The water-supply comes from a well, situated between the house and a graveyard, about eighty feet from the latter, from which there is a slight downward slope.

At the Mann farm the livestock and buildings were found in excellent condition. The water for barn and dwelling was derived from a well twenty-six feet deep, well bricked and curbed, and was conveyed by a lead pipe to a pump in the barn about six feet from the privy vault. The latter was well built of brick and cement seemed quite tight, and there was no odor or perceptible leakage. The lead pipe passed from the pump directly by the vault a few feet below the surface of the cellar floor, to the bottom of the well. The distance between the vault and the well was not more than eighteen feet, but the vault was built up from the cellar-floor and not sunk below the surface.

Our inquiries as to present or past sickness at the farm were answered in the negative. On leaving the farm, however, we received an intimation from a neighboring farmer of whom we made inquiries, that there had been some sickness there in the autumn. The farm was therefore revisited, and the investigation renewed.

On re-examination, Mr. Mann recollected that his son had not felt well in the early autumn, and that on September 13th, he went to bed with typhoid fever. The description of the symptoms was sufficiently convincing that the diagnosis of the attending physician was correct. The father took entire charge of the nursing, and emptied the excreta every day into the vault, and with each addition threw in a quantity of ashes or ordinary soil. At the same time he performed his usual duties about the farm, superintended the milking, and prepared the milk for the market. The sickness lasted several weeks, and convalescence was rapid. The boy was up and about after the first of November, after a sickness of about seven weeks. He had been living at the farm only a month before taking to his bed. On or about November 1st, a man

who had been employed about the farm went away, and about three weeks later was taken with the same disease. A few days after his departure, Mr. Mann assisted by his younger son cleared out the vault, the contents of which were thrown out on the ground near by and covered with earth. On November 18th, that is to say, within three weeks, the epidemic broke out in Cambridge.

The results of the chemical analysis of the samples of water from the five farms are tabulated below.

[Figures express parts per 100,000.]

FARM.	Free Ammonia.	Alb'd Ammonia.	Chlorine.	Residue.			Hardness.
				Fixed	Vola.	Total	
Howe { (running) / { water) }	0.0006	0.0118	0.25	1.3	1.6	2.9	1°
Sullivan, "	none.	0.0034	0.20	3.1	0.9	4.0	1.5°
Morgan (well).....	0.0044	0.0020	1.65	4.5	2.3	6.8	2°
Whittemore (well)	0.0004	0.0026	0.20	2.7	1.2	3.9	1°
Mann, "	none.	0.0046	1.60	6.5	2.2	8.7	4.5°

All five samples were clear, colorless, and odorless, and by the ferrous-sulphate test showed no nitrates.

The chemical examination of the samples showed them to be with one exception waters of unusual purity. The exception was the water of the Howe farm, which showed a rather large amount of albuminoid ammonia, doubtless due to vegetable matter.

There was no chemical evidence of soakage into the Mann well. At the time the vault was cleaned the ground was frozen, and the excreta would therefore have had some difficulty in penetrating through the soil into the well. Any serious pollution in November would probably have left some traces at this time. It seemed advisable to take samples from this well later on, after the frost should have left the ground, and this was done as will be shown.

The biological examination of the samples of water and of milk from the five farms was made by Dr. Henry Jackson, on January 5th, with the following results, which I have been kindly permitted to take from his report to the Board of Health.

HOWE FARM.

Water. 250 to 300 colonies in one cubic centimeter. The following varieties were distinguished: (*a*) Elevated brown colonies of vigorous growth, microscopically, round cocci. (*b*) Rapidly growing colonies, causing liquefaction of the gelatine, and formation of a white flocculent sediment; microscopically, thick, very short rods. (*c*) Elevated fine white colonies causing no liquefaction of gelatine; thick rods about twice as long as they are broad.

Milk. In one cubic centimeter of sample taken from a cool room in the house were found by estimation 2,000 colonies. (*a*) Raised brown colonies; cocci. (*b*) White colonies liquifying gelatine; microscopically, short rods.

Remarks. Bacteria in water more numerous than they should be in good potable water. Before condemning the water, however, two facts must be considered: (1) The water in the trough is constantly open to contamination from outside sources (cows drinking, etc.). (2) Twenty-four hours elapsed before the cultures were made.

WHITTEMORE FARM.

Water. In one cubic centimeter nine colonies: (*a*) Brown, elevated; cocci. (*b*) White, not much elevated, non-liquifying; short, thick rods.

Milk. In one cubic centimeter 100 colonies, mostly the same variety. Microscopic examination of several showed small, round cocci; a few brown colonies; microscopically, cocci.

MORGAN FARM.

Water. In one cubic centimeter, fourteen small colonies: (*a*) Several pure white colonies; microscopically, small, perfectly round cocci. (*b*) Yellowish-white colonies; microscopically, thick rods about twice as long as broad; after a week, slow liquefaction of gelatine.

Milk. In one cubic centimeter, many hundred small, white colonies, and a few brown colonies. (*a*) White colonies, minute round cocci. (*b*) Brown colonies, rather large, oval cocci.

Water contains a small number of bacteria, and in winter at any rate is not contaminated by the overlying excrement.

SULLIVAN FARM.

Water. In one cubic centimeter, forty colonies. (*a*) Chiefly, raised brown colonies; microscopically, short, thick rods. (*b*) A few small, white colonies; cocci. Considering the exposure of the water to external contamination, the specimen contained very few bacteria.

Milk. In one cubic centimeter thirty non-liquefying white colonies; cocci.

MANN FARM.

Water. In one cubic centimeter forty-eight colonies. (*a*) Nine small colonies liquefying the gelatine, and making a white flocculent sediment; microscopically, short, thick rods. (*b*) Thirteen small, white colonies with slight depression of surrounding gelatine; microscopically, short, thick rods. The water cannot be considered as bad.

Milk. In one cubic centimeter about one thousand small, white colonies; microscopically, cocci, many arranged in pairs as diplococci.

Dr. Jackson sums up as follows: "(*a*) No bacteria have been found that can be considered as pathogenetic. (*b*) So far as the number of bacteria determines the quality of the water — that from the Whittemore and Morgan farms is good, being practically free from bacteria; that from the Mann and Sullivan farms cannot be considered to contain an undue number of bacteria; that from the Howe farm is probably contaminated, from some source, with organic matter. The milk from the Sullivan and Whittemore farms contained comparatively few bacteria; that from the other farms a large number, but the examination gives no ground for the supposition that pathogenetic forms are present."

It will be noticed that the biological analysis yielded results in close agreement with those of the chemical examination, and that the only specimen of water to which any exception could be taken was shown by both processes to be probably contaminated by vegetable matter. As indicating any connection between the water-supply and the outbreak at Cambridge, the analyses were perfectly negative. Had the water on the Mann farm, where the sickness had occurred, proved chemically or biologically bad, it might have been looked upon as a valuable piece of evidence in support of the drinking-water theory of the origin or

dissemination of typhoid, and the evidence would have been so much the stronger from the fact that the excreta had been thrown out on the ground some time before the outbreak occurred. At the same time it is to be remembered that the ground was frozen, that the excreta soon became so, and that the well is protected by a curbing from surface-washing. It is possible that the character of the water may have been very different in November from what it was on January 4th, but even a moderate contamination at that time would probably not have disappeared so completely in so short an interval. It is very unfortunate that we have no means of knowing anything about its quality before the outbreak. But assuming that there was a serious contamination in November, how could it have been brought about? Soakage from the vault directly through the soil seems highly improbable on several grounds. The vault was evidently built with great care; the walls are very thick, the floor of brick with eighteen inches of cement; there was no visible evidence of soakage anywhere about the vault, which, being built directly up from the floor of the cellar, was open to ready inspection; moreover, the contents of the vault were at no time in a fluid condition since enough soil and ashes had been thrown in to render the contents at best only semi-fluid. Contamination by the excreta after their removal from the vault and deposition on the ground seems more probable, though as already stated there were some obstacles in the way of that process.

Moreover, the farm-hand who was taken sick at or about the same time that the outbreak occurred in Cambridge, left the farm several days before the vault was cleaned, so that if his case and those at Cambridge had a common origin, that influence was at work before the soil about the well was polluted by the vault contents. That the cause of the outbreak in Cambridge was in the milk supplied from Suncook there can be little doubt, and that the milk derived its infection from the case of sickness at the farm or from the cause of that sickness, seems extremely probable. But the manner of infection is unknown; it may have been through the water, but there is nothing to prove such a condition, and there are reasons already mentioned against it; it may have been through the air, or communicated by the hands of the milkers; or it may have been from the cattle themselves. The theory of cattle origin of typhoid is one not yet fully developed, but very worthy of serious consideration.

As the analysis of the water had given only negative results, and as we had no previous analysis with which to make comparisons, it was deemed advisable to obtain a second sample of the Mann water later on in the season when the frost should have left the ground. It was reasonably supposed that if the well had been seriously contaminated in November, the amount of chlorine at least would be not materially greater in the following May than in January, for had the ground become saturated with the contents of the vault to such an extent that the water in the well could be contaminated, the pollution would under the usual conditions be a continuous one, with after a time, a progressive diminution in amount until the water should again be in its natural condition, provided no new element of contamination were introduced. On the other hand if, as seemed probable, the soil surrounding the well had not become impregnated by the filth, the ground being frozen at the time the deposit of fæcal matter occurred, and the filth itself being frozen, the character of the water ought to undergo considerable change before the end of spring. On May 9th, Inspector Terry again visited the Mann farm, and obtained another sample of water, which he delivered to me immediately on his return. A sample was taken also for biological analysis, and delivered to Dr. Gardner T. Swarts. By chemical analysis I found the organic matter not materially changed in amount, as shown by the albuminoid ammonia. The chlorine and residue, however, were found to have increased very largely, as may be seen from the following figures of the examinations in January and May.

DATE.	Free Ammonia.	Alb'd Ammonia.	Chlorine.	Residue.			Hardness.	Nitrates.
				Fixed	Vola.	Total		
Jan. 4....	none.	0.0046	1.60	6.5	2.2	8.7	4.5°	absent.
May 9....	none.	0.0026	5.80	18.0	6.1	24.1		trace.

From these it will be seen that while the organic matter shows no increase in amount, probably because of oxidation, the chlorine and residue are increased; the former to more than three times its former amount, the latter to a somewhat less extent. In the January sample no nitrates were found by the ferrous-sulphate test, while in the May sample, the reaction was marked.

The biological examination by Dr. Swarts, to whom I am indebted for the report, yielded the following results:

(1) One cubic centimeter gave 1040 colonies.

(2) One-sixth cubic centimeter gave 325, 1950 for the whole cubic centimeter.

(3) and (4) Both plates liquefied.

Isolation analysis: Large, white non-liquefying, irregular; small, white non-liquefying, regular. Fluorescent green liquefying, regular. Growth of white on potato, negative.

In November I communicated with Mr. Mann and requested him to send me a third sample for further comparison, which for some reason he failed to do. Later on, in May of the present year, I sent a man to the farm and obtained a sample, which, compared with the specimen of the previous May, showed a marked diminution in the amounts of chlorine and residue, but yet by no means as great a diminution as was to be expected if no new source of soil pollution had been introduced. No biological analysis was made.

DATE.	Free Ammonia.	Alb'd Ammonia.	Chlorine.	Residue.			Nitrates by Ferrous Sulphates.
				Fixed	Vola.	Total	
May, 1887...	none.	0.0026	5.80	18.0	6.1	24.1	trace.
May, 1888...	0.0024	0.0038	4.14	11.5	4.1	15.6	trace.

The chemical analyses indicated first, that the water six weeks after the outbreak showed no evidence of pollution by the material thrown out from the vault on to the ground near the well; second, that later when the ground was open, a considerable pollution was manifest; and third, that at a corresponding time of the next year, and under the same conditions, the evidence of contamination was not so great, showing an improvement in the character of the surrounding

soil in spite of a possible removal of the cause of pollution.

The possibility of the infection of milk by organisms floating in the air is one which has been long recognized. Direct contamination by the hands of the milkers has been in several investigations of this nature regarded as more than a possible cause. The possibility of animal origin of typhoid fever has been within a few years the subject of careful inquiry, and several investigations of milk typhoid epidemics have given important evidence bearing on this point, which it seems to me is worthy of the most careful research.

The manner of the infection of this particular milk-supply can of course never be known, but in view of the evidence yielded by the examinations of the water, it seems not improbable that contamination was brought about in one of the other ways above mentioned.

ENDEMIC CEREBRO-SPINAL MENINGITIS.[1]

BY CHARLES W. TOWNSEND, M.D.

MEDICAL literature abounds in records of epidemics of cerebro-spinal meningitis, which, first definitely recognized and described in 1805, in Europe, gained a foothold in this country in 1806, under the name of spotted fever, appearing first in Medfield, Mass. Since then there have been numerous epidemics of this disease in widely separated regions of this country, one occurring in Boston, in 1873. But like diphtheria, besides coming at intervals in epidemics, cerebro-spinal meningitis occurs with more or less frequency in certain places at all times, that is to say, it has in these places become naturalized or endemic.

According to J. Lewis Smith,[2] cerebro-spinal meningitis is becoming more rapidly naturalized in the northern than in the southern cities, especially in Chicago, New York, Philadelphia and Jersey City, and that it also occurs, but to a less extent, in Cincinnati, Boston, Worcester, New Haven, Albany, Milwaukee, Baltimore, St. Louis, Minneapolis, San Francisco and other cities. Since the great epidemic in New York of 1872, cerebro-spinal meningitis has not been absent from that city. Smith [3] says that it is fully established there and that "it has become one of the scourges of childhood, destroying many lives each year and injuring irreparably by deafness or in other ways, many who recover." The deaths from this disease in New York in 1883, were two hundred and twenty-three in number, averaging eighteen a month, and very evenly distributed throughout the year, and the fatality has been almost the same for the last few years, the cases all being endemic.

In Boston a few cases are said to have occurred in 1810, at the time of the epidemic in Worcester County. From an examination of the city registrar's reports, first published in 1849, I can find no record of a death by this disease prior to 1865, in which year two deaths are reported under the name of spotted fever. In 1866 there were no deaths, while in 1867, seven deaths are recorded from cerebro-spinal fever. The following table shows the number of deaths in Boston from that date to the present time:

1865	2	1871	3	1877	24
1866	0	1872	60	1878	19
1867	7	1873	216	1879	15
1868	8	1874	35	1880	9
1869	7	1875	41	1881	16
1870	5	1876	13	1882	24
				Total	602.

1883	23
1884	26
1885	19
1886	14
1887	16

An examination of the monthly records since 1879 shows that the deaths are fairly evenly distributed throughout the year, as is shown in the following table of one hundred and sixty-two cases:

January	15	July	13
February	13	August	12
March	26	September	9
April	17	October	10
May	14	November	8
June	13	December	12

Of these cases ninety-two were males, seventy females, and ninety-two were children under five years of age.

The United States mortality statistics for the year 1880, show 2,898 deaths from cerebro-spinal meningitis, of which the larger number 1,537 were male, the smaller, 1,361, female. Nearly one-fourth part of the whole number, or 619, were under one year of age, and 1,567 or more than a half, were under five years. Of the remainder, 761, or over a quarter of the whole number, were between the ages of five and twenty years, leaving less than one-quarter of the whole number of deaths from the disease in individuals over twenty years of age.

The following table obtained at the office of the Boston Board of Health gives the number of deaths from cerebro-spinal meningitis in some of the cities of the world during the year 1885, and is of interest as showing the wide distribution of the disease.

New York	202	London	..
Philadelphia	87	Scotland	..
Chicago	142	Dublin and Cork	..
Baltimore	24	Stockholm	2
St. Louis	30	Belgium	..
Boston	19	France	..
San Francisco	38	The Hague	183
New Orleans	5	Rome	..
Cincinnati	32	Bologna	9
Milwaukee	27	Berlin	14
Pittsburg	14	Dresden	4
Providence	3	Leipzig	10
Alleghany	22	Nuremburg	8
Richmond	10	Chemnitz	47
New Haven	5	Brunswick	4
Lowell	31	Strassburg	185
Toledo	10	Danzig	14
Cambridge	1	Prague	3
Syracuse	17	Calcutta	..
Knoxville, Tenn.	5	Melbourne	..
Richmond, Ind.	2	Halifax	..

Cerebro-spinal meningitis, therefore, although but recently recognized, has spread throughout the northern civilized world, and has become thoroughly established, naturalized or endemic, in many of the cities, and we may reasonably conclude that since the disease has been increasing in past years, it may continue to do so in the future. It is certainly important, therefore, to be able to recognize the disease, and if possible, to prevent its spread.

That cerebro-spinal meningitis is an infectious disease, is evident from its course, and from its epidemic and endemic character; that it is not contagious in the ordinary sense of the term is also a well-recognized fact. As is the case with all infectious diseases micro-organisms are generally admitted to be the cause. There are numerous investigations on this point by

[1] Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Suffolk District Medical Society, May 9, 1888.
[2] Contribution to the Study of Cerebro-Spinal Meningitis, N. Y. Med. Rec., May 14, 1887, p. 542.
[3] New York Med. Rec., November 24, 1883.

Klebs,[4] Fraenkel,[5] Eberth,[6] Leyden,[7] Senger,[8] Weichselbaum,[9] Goldschmidt,[10] and others, even a brief review of which would far exceed the bounds and purpose of this paper. Suffice it to say, however, that there is tolerable agreement among these investigators, in admitting the presence of a micro-coccus in the purulent fluid of the cerebral and spinal meninges found in cases of cerebro-spinal meningitis. Fraenkel found that this micro-coccus was identical with that previously found by him in cases of acute lobar or croupous pneumonia, and this has been confirmed by other observers. Weichselbaum, by injecting pure cultivations of these organisms produced apparently croupous pneumonia or cerebro-spinal meningitis dependent on the place of injection. He also described a second distinct species of micro-organism present in six uncomplicated cases of cerebro-spinal meningitis, named by him *Diplococcus intracellularis meningitidis*, a diplococcus found partly in the pus cells and partly free. Goldschmidt,[11] in a recent elaborate paper, confirmed these observations of Weichselbaum, and with him agreed that in certain cases of cerebro-spinal meningitis, this organism bears a causative relation to the disease. Between croupous pneumonia and cerebro-spinal meningitis there certainly seems to be some relation from clinical observations alone, for the coincidence of the two diseases in the same patient is not uncommon. Dr. Webber,[12] in his Boylston Prize Essay on "Cerebro-Spinal Meningitis," makes a special division for this class of cases where the "force," as he expresses it, "falls upon the lungs" (*vide* also Wilcox.[13])

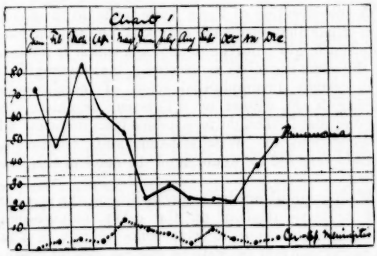
The micro-coccus in producing the disease is supposed to obtain access to the meninges of the brain through the ethmoid plate from the nose in some cases, and from the tympanitic cavity in others, and, as proof of this theory, the organisms have been found by several observers in both of these regions. Although undoubtedly the same organism bears a close relation to both croupous pneumonia and cerebro-spinal meningitis in some cases, yet it seems hardly creditable that ordinary croupous pneumonia, universally common, should be caused by the same microbe as the latter disease, which, unknown in some places, is everywhere rare in comparison with pneumonia. It has been said, however, that pneumonia is much more frequent simply because the micro-cocci have much more easy access to the lungs than to the brain. If that be the fact, then, there should be a tolerably constant relation between the numbers of the two diseases, and, therefore, when pneumonia is very common we should expect more cases of cerebro-spinal meningitis than usual, and on the other hand in epidemics of cerebro-spinal meningitis, pneumonia would rage still more. J. Lewis Smith[14] says that in New York City, during the cerebro-spinal meningitis epidemic of 1872, pneumonia was also unusually prevalent, and the symptoms were of greater gravity than usual. Muscular pains, restlessness, and delirium often preceded for hours or even days the pneumonia symptoms, and in some cases both diseases were developed. In Boston, however, the mortality statistics show no increase of pneumonia during the years of the cerebro-spinal epidemic, as will be seen by a glance at this table.

Year.	Deaths from Cerebro-Spinal Meningitis.	Deaths from Pneumonia.	Percentage of deaths from Pneumonia to total mortality.
1870	5	336	5.51
1871	3	345	5.86
1872	60	517	6.39
1873	216	463	5.88
1874	35	571	7.31
1875	41	632	7.06
1876	13	523	6.38
1877.	24	484	6.64
1878	19	581	7.57

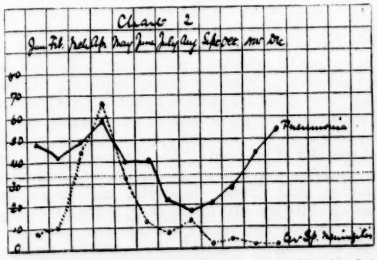
The yearly average ratio[15] of the deaths from pneumonia in Boston to the total mortality from the year 1836 to 1877, is 6.11.

J. Lewis Smith[16] says that from February 1st to June 1st, 1872, when the epidemic of cerebro-spinal meningitis was at its height in New York, 1,707 deaths were recorded from diseases of the respiratory organs exclusive of phthisis, while only 1,336 deaths from the same causes occurred during the remaining eight months.

To show the relations by months of these two diseases in Boston, I have constructed the following charts.



Monthly Mortality from Pneumonia (517 cases) and Cerebro-Spinal Meningitis (60 cases) in Boston in 1872.

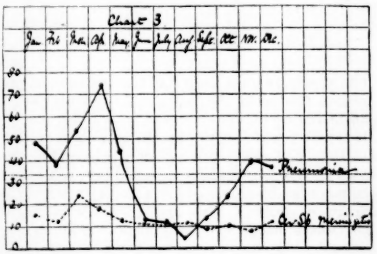


Monthly Mortality from Pneumonia (463 cases) and Cerebro-Spinal Meningitis (216 cases) in Boston in 1873.

In 1872 there is no correspondence between the charts of the two diseases, while in 1873 the greater

[4] Archiv. f. Exper. Pathol. Bd. 4.
[5] Deutsch. Med. Wochenschr., No. 13, 1886.
[6] Deutsch. Archiv. f. Klin. Med. Bd. 29.
[7] Centralbl. f. Klin. Med. 1883.
[8] Archiv. f. Exper. Pathol. Bd. 20.
[9] Fortschritte der Medicin. September 15 and October 1, 1887.
[10] Centralb. f. Bacteriol. u. Parasit., 1887, ii, 649.
[11] Loc. cit.
[12] Cerebro-Spinal Meningitis. The Boylston Prize Essay for 1866.
[13] Pulmonic form of Cer.-Sp. Menin. N. Y. Med. Jour., 1887, xlvi.
[14] New York Medical Record, Nov. 24, 1883.
[15] City Registrar's Report for 1877.
[16] Loc. cit.,

number of cases of both diseases occurred between February and June, thus agreeing with the results found by Smith in New York. This correspondence in 1872 seems, however, to have been accidental as far as the cerebro-spinal meningitis is concerned, as will be seen by reference to Chart 3. Here the pneumonia monthly line represents 412 cases occurring at the Massachusetts General Hospital [17] from 1870 to 1885 inclusive, and it is interesting to see how closely it corresponds with the pneumonia lines on the other two charts. The cerebro-spinal meningitis line represents 162 cases of deaths from that disease in Boston, from 1879 to 1887 inclusive.



Monthly Chart of Cases of Pneumonia at the Massachusetts General Hospital (412 cases) from 1870 to 1885 inclusive, and Monthly Mortality from Cerebro-Spinal Meningitis (162 cases) in Boston from 1879 to 1887 inclusive.

A consideration of these facts tends to the conclusion either that ordinary croupous pneumonia has a different origin from the pneumonia which is produced by the same organism as cerebro-spinal meningitis, or that certain uncomplicated cases of cerebro-spinal meningitis are caused by a different organism from the one that is thought to produce both diseases. The investigations of Weichselbaum and Goldschmidt already referred to would tend to confirm this latter view.

With acute ulcerative endocarditis on the one hand and acute rheumatism on the other, cerebro-spinal meningitis also seems to have some relation as shown by bacteriological as well as clinical studies. Much however, remains to be done to clear up this interesting and perplexing subject.

The diagnosis of cerebro-spinal meningitis, is very simple in many cases where the disease appears in its fully developed form, with characters so distinct that they cannot be mistaken; particularly is this the case in epidemics. Sporadic cases, however, although often very characteristic are sometimes very obscure to the physician, particularly from the fact that he may not be on the look-out for this disease, and does not consider it in making his diagnosis. A typical case includes the following symptoms: rapid onset, vomiting, chill, intense headache, stiffness and contraction of the muscles of the neck, pulling the occiput back towards the spine; opisthotonos, pain in the neck and back, which with the headache comes and goes abruptly; contraction of muscles of extremities, delirium, convulsions, coma; hyperæsthesia of the skin, herpes of face or elsewhere, and occasionally other lesions of the skin in the form of petechial and larger ecchymoses, roseola or erythema, together with an irregular, elevated temperature. The symptoms of Kernig, that is to say, the spasmodic contraction of the flexors of the legs on flexing the thigh on the pelvis, can nearly always be obtained in cases of cerebro-spinal meningitis. It is not, however, diagnostic of this disease as it has been found in purulent or tubercular meningitis or other diseases of the brain and its meninges.

It is a disease which, both in times of epidemics, and when occurring sporadically, may run a violent course, ending in death within twenty-four hours, the shortest case on record being one of death in three and one-half hours, reported by Jewell.[18] This is fulminant cerebro-spinal meningitis, the *foudroyante* form of the French. Secondly, it may appear as the abortive form, with slight or moderately severe headache, stiffness of the neck, and perhaps a few herpes vesicles, and end in recovery in a few days. Thirdly, the so-called intermittent form. This latter form, a a form recently described by Henoch [19] as occurring in Berlin, is characterized by intermissions at irregular intervals, when not only is the temperature normal, but the other symptoms may almost entirely disappear. Thus a child in good health is suddenly seized with vomiting, pain in the head, fever, and rigid drawing back of the head, so that in some cases the occiput may even touch the back. The pain in the head is often severe, spoken of by older patients as boring and intense beyond description, and the child constantly screams and tosses about the bed. Pain in the neck and back may also be present, and the pain is occasionally referred to the epigastric region, as in cases of dorsal caries. Cutaneous hyperæsthesia may or may not exist, and is difficult to determine in children. The other symptoms previously mentioned may also be present. In the course of one or two weeks the fever abates, and with it the other symptoms, and the prospect of speedy convalescence brings joy to the family. The temperature remains normal, the appetite returns, but usually a slight stiffness of the neck muscles exists. After an interval of one or several days, an attack similar to the initial one takes place, with elevation of the temperature, which again lasts for a longer or shorter period. In this way, with exacerbations and remissions or intermissions, the disease may last for weeks. Sometimes the patient sinks into a typhoidal condition, and Hirsch makes a fourth group of typhoid cerebro-spinal meningitis.

All these forms are found both in epidemics and in the naturalized cases, but, according to J. Lewis Smith,[20] the latter are accompanied by less profound blood changes; out of a considerable number of endemic cases observed by him in the last ten years, he has not seen any with ecchymoses, which are so common in some epidemics, and from which the name of "spotted fever" is derived.

In making the differential diagnosis of this disease from others, fulminant cases are generally easily recognized by their characteristic symptoms and their intensity; but in those that terminate within a few hours in death the diagnosis may be very uncertain. Cases of cerebral or meningeal hæmorrhage, with convulsions, rapidly ending in death, may simulate cerebro-spinal meningitis, and, according to J. Lewis

[17] C. W. Townsend. Analysis of 412 cases of Pneumonia. Boston Medical and Surgical Journal, March 25, 1886.

[18] Quoted by Whittaker. Ref. Handb. of Med. Sc., Vol. I, p. 37.

[19] Pathology of Cerebro-Spinal Meningitis. Charité Annalen, XI, 1886, p. 575.

[20] N. Y. Med. Rec., Nov. 24, 1883.

Smith, cases are sometimes called infantile cerebral paralysis. In both these cases the absence of much elevation of the temperature and the evidence of localized cerebral disturbance would be of help in making the diagnosis.

From tubercular meningitis the diagnosis can generally be made, although this is sometimes difficult, or even impossible. The gradual onset of tubercular meningitis, as distinguished from the abrupt onset of cerebro-spinal meningitis, the family history of tuberculosis, and the evidence of a deposit of tubercles elsewhere in the body, are of importance in making the diagnosis. It is necessary to remark here that prodromal symptoms of chilliness, fever, headache, and vomiting may sometimes precede for several days the onset of cerebro-spinal meningitis. Retraction of the head is seen in some cases of basilar tubercular meningitis, but is rarely as marked and persistent as in cerebro-spinal meningitis. If, however, the tubercles have, also, a spinal distribution, as well as cerebral, the symptoms of cerebro-spinal meningitis are necessarily exactly reproduced. In the tuberculous forms, however, herpes or the other skin lesions described above do not occur.

In simple meningitis we have the history of traumatism or of disease of the middle ear to aid us in making the diagnosis. True cases of cerebro-spinal meningitis have, however, been said to follow a blow on the head, or where the brain has been disturbed by strong emotions, as grief or anxiety. Jaffé [21] relates a case where, after fracture of the skull from a fall, vomiting, stiffness of the neck, and convulsions occurred, with death on the third day. The autopsy showed cerebro-spinal meningitis.

The onset of an acute disease in children, like scarlet fever or lobar pneumonia, may be marked by severe cerebral symptoms, vomiting, retraction of the head, convulsions, stupor, together with high temperature, and may lead one to suspect cerebro-spinal meningitis, and it is necessary to reserve the diagnosis and watch the progress of the case. In scarlet fever, the redness of the throat, the existence of an epidemic of the disease, the history of exposure, and later, the appearance of the characteristic rash, makes the diagnosis plain. There are cases of scarlet fever, however, where death occurs within twenty-four hours without the appearance of the rash, and with symptoms very similar to fulminant cerebro-spinal meningitis. In these cases, Dr. Mason [22] remarks that even an autopsy might not settle the diagnosis.

In lobar pneumonia, the frequent absence in children of the cardinal symptoms found in the adult — chill, rusty expectoration, pain near the nipple, and even, in some cases, of cough, with often a delay of several days in the appearance of the signs in the lung — makes the diagnosis obscure. Although vomiting, delirium, drowsiness, and one or two convulsions often occur in these cases of simple pneumonia, if we find persistent retraction of the head, arching of the fontanelle, severe headache, and retardation of the respiration, with frequently recurring convulsions and coma, together with the signs in the lungs, the existence of both cerebro-spinal meningitis and pneumonia is probable. An irregular and intermittent rapid pulse in the pneumonia of children, as well as in other febrile diseases of children, is not uncommon, but, according to Holt,[23] a slow, irregular, or intermittent pulse may be found in meningitis, but not in pneumonia. The persistent high temperature, with little difference between morning and evening, is characteristic of pneumonia, but not of meningitis. Ziemssen,[24] however, says that the temperature and respirations of pneumonia may continue unchanged, notwithstanding the presence of cerebro-spinal meningitis.

From typhus fever, with which cerebro-spinal meningitis was formerly confused, it can be distinguished by several marked features. Typhus fever is highly contagious; the patient does not, as a rule, take to the bed until the second or third day. A copious macular eruption appears generally on the fourth or fifth day. Intense headache and pain in the back, with retraction of the head and opisthotonos, are rarely found in typhus fever. The gradual onset of typhoid fever, together with the abdominal symptoms, make the differential diagnosis in this case clear. J. Lewis Smith relates the case of an infant with a temperature of 104°, stiffness of the neck, and some retraction of the head, which led him to consider cerebro-spinal meningitis, but a more careful examination showed a retro-pharyngeal abscess and beginning cervical caries.

The diagnosis of abortive cases is often only conjectural. Thus, during the prevalence of the disease, cases are frequently observed of lassitude, pain in the nape of neck and in the head, with slight retraction of the head in some cases, and recovery in a few days. Such cases are occasionally seen when no epidemic prevails, but one would hardly be justified in making the diagnosis of cerebro-spinal meningitis unless undoubted cases existed in the same place at the same time. Thus a breast-fed child five months old was seen by me November 29, 1886, who for three days vomited occasionally, nursed but little, cried as if in pain, and drew the head back rigidly, so that the occiput at times touched the spine. The head was kept in this position only part of the time. The fontanelle was arched and the temperature moderately elevated. Complete recovery followed. In a second case, aged fifteen months, where the parents had already made the diagnosis of "water on the brain," similar symptoms lasted five days, and were followed by complete recovery. During an epidemic, these cases might be called abortive cases of cerebro-spinal meningitis; at other times, simple examples of the great reflex nervous irritability in children resulting from insignificant causes.

A temporary pain and stiffness of the neck muscles may be caused by muscular rheumatism. In these cases, which West speaks of, there is an absence of headache, and recovery takes place in a few days, and is aided by warm or counter-irritant applications.

The prognosis in cerebro-spinal meningitis varies extremely, and the mortality is stated at from twenty to seventy-five per cent, but many very severe cases recover. Smith says that "patients who live till the close of the second week without serious complications will probably recover," the danger after this period being mostly from malnutrition and exhaustion. Henoch [25] states that the prognosis is very favorable in the naturalized, intermittent cases observed by him in Berlin; he has never seen a death during an exac-

[21] Deutsch. Archiv. f. Klin. Med., 1882, xxx, p. 332.
[22] Boston Medical and Surgical Journal, 1884, cx, p. 121.
[23] Med. Rec., N. Y., April 7, 1888, p. 385.
[24] Ziemssen's Cycl., Am. Ed., Vol. II, p. 683.
[25] Loc. cit.

erbation or relapse. Kernig[26] reports a case that lasted two and a half months, and finally died of marasmus, and Larrabie[27] one that died in a similar way at the end of sixteen weeks. Smith reports one that died in eighteen weeks, and another, a boy four and a half years old, whose head was retracted for four and a half months, who became greatly emaciated, and who was unable to get out of bed for five and a half months, but finally completely recovered.

For treatment, opium, often in large doses, is necessary to relieve the agonizing and exhausting pain; bromides are occasionally sufficient; cold applications to the head and spine and a careful sustaining diet, with the use of stimulants in protracted cases, are indicated.

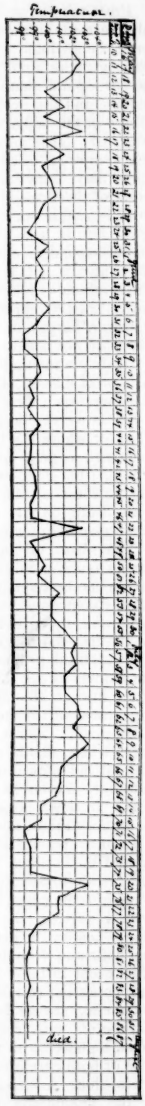
The following two cases illustrate very well two forms of the disease, the fulminant and the intermittent. The first I saw with Dr. F. M. Briggs, to whom I am indebted for allowing me to report the case. The diagnosis in the second case was confirmed by Dr. Rotch and Dr. Buckingham, who saw the case with me:

CASE I. Male, aged two months, breast-fed; previously well. After three days of fever and great fretfulness, the head was drawn back so that the occiput nearly touched the spine, and the infant had several slight general convulsions. When seen at this time, the head was rigidly retracted, the eyes open and staring, the pupils reacting sluggishly to light. Fontanelle arched. Redness and swelling of the joints of fingers and toes, which was marked at first, had nearly disappeared. No eruption on the skin. Abdomen distended and tympanitic; legs rigidly drawn up. Child died two days later without developing any other symptoms. The swelling of the joints is especially interesting, and has been noted by several observers in epidemic cases of cerebro-spinal meningitis.[28]

CASE II. Joseph X., aged four and one-half years, first seen May 16, 1887, and the following history obtained from the mother. Family history good; previously well with the exception of measles when one year old. He began suddenly to vomit on May 9th, at 5 P. M., the vomiting continuing at intervals for two days. From the first he complained of severe pain in the head and abdomen. From the second day the head was rigidly drawn back, and although rational most of the time he had occasionally been mildly delirious. From the first had been feverish; no cough; no convulsions; bowels moved to-day for the first time for a week. Hot applications to the abdomen had given no relief from the pain.

Examination showed a pale, fairly nourished boy, with brown-coated tongue; pulse 124, regular; temperature 102°; respirations 20, regular. Head drawn back so as nearly to touch the spine, the muscles of the neck being rigidly contracted. Slight opisthotonos. No contractions of muscles of limbs. The symptom of Kernig was present markedly. No tenderness along the spine; cutaneous sensibility everywhere normal; no cutaneous eruptions or ecchymoses. Pupils regular, react equally to light; no strabismus or photophobia. Nothing abnormal on thoracic or abdominal examination. Patient tossing about the bed moaning and crying out; expression that of great pain.

He was put on a milk diet and pot. bromide ordered every two hours. As this gave no relief to the intense suffering, morphia, in doses of one-thirty-second of a grain was given. This was repeated by the mother so frequently that the child had one-fourth of a grain in three hours, at the end of which time he fell asleep to awake in eight hours crying out with pain in his head. Ice to head and spine gave no relief, but morphia, to the amount of one-sixth to one-third of a grain during the twenty-four hours, controlled the pain and quieted the restlessness which was fast wearing out the nurse as well as the patient. On the 24th day of the disease the temperature, which had varied between 100° and 103° (*vide* chart), sank to normal, where it remained till the forty-seventh day. During this interval the head was but slightly retracted and the patient seemed to be generally free from pain, but remained in a very listless condition, not speaking, taking but little nourishment and stimulant, becoming emaciated, passing urine and faces involuntarily, and vomiting occasionally. Nutritive enemata were not retained after a few days' trial, buton the 41st day peptonized milk was retained by the stomach, and on the 46th day he improved so much as to take gruel with readiness, and talked and laughed. On the 47th day, June 22d, a relapse occurred, the temperature going up to 103.6°, the head was rigidly drawn back, the eyes were staring, and pain was present. The symptoms of Kernig which had never entirely disappeared, again became well-marked. On the 66th day convulsive movements of left arm and leg with turning in of left eye occurred. Several days previous to this relapse, a numerous crop of sudamina appeared on neck and trunk, and a fugitive erythema and macular eruption on neck and face, lasting only a few hours. From the 61st to the 66th day his body was covered with a macular eruption, the macules varying in size from a pin-head to a pea. At no time were ecchymoses to be seen.



[26] Berlin Klin. Wochenschr., 1884, No. 52.

[27] Richmond Jour. of Med., Dec., 1872, p. 779.

[28] Since this paper was written, I have had a fulminant case of cerebro-spinal meningitis in a female infant of four and one-half months, fatal in twenty-four hours, beginning suddenly with vomiting and high fever, which reached 106°. In the last twelve hours the skin was spotted with ecchymoses, and frequent, irregular, convulsive movements occurred.

Repeated examinations of chest and abdomen showed nothing abnormal.

From the 71st to the 73d day the temperature was again normal, nourishment was taken well, the neck was straight, and general appearances were encouraging, but on the 74th day he again had convulsive movements, most marked on the left side of the body, the head was again drawn back, and at noon the next day his temperature was 103°. The pulse, which during the entire illness ranged from 120 to 140, and had previously been regular, was now at times irregular and intermittent. The bowels were generally constipated. After this, although the temperature came down to normal, he failed rapidly, and on August 1st, the end of the third month or the 87th day of the disease, when he was so emaciated that the finger and thumb could easily encircle his thigh, he quietly died.

A CASE OF CEREBRO-SPINAL MENINGITIS.[1]

BY HENRY B. JACOBS, M.D., BOSTON.

IN connection with the subject under discussion, perhaps this case may prove interesting. I am able to report it through the kindness of Dr. Whittier, into whose service it came at the Massachusetts General Hospital, January last, during my term as house-pupil.

The patient, living near the junction of Joy and Cambridge Streets, thirty-eight years old, mother of two children, aged eighteen and twenty respectively, was a strong, well woman till six days before entrance, without history of previous sickness or traumatism. One week before coming to Hospital, on a damp, cold day, she had worked unusually hard, most of the time out-of-doors. The next day she had a slight cough, some headache and backache, and felt tired and without appetite. She assumed she had taken cold, and thought little of it; her catamenial period was due, and to this, also, her symptoms were partly attributed.

In the next day or two, however, her headache increased in severity. She became feverish and weak, and had to take to bed. On the fourth day of her illness she was noticed to be somewhat irrational, and on the fifth and sixth days was in violent delirium, and only with great difficulty kept in bed.

She entered on the seventh day of her sickness, and the following record was made by the house-pupil: Patient a well-nourished woman of medium stature, in state of rather violent delirium, noisy and incoherent, extremely restless, struggling almost incessantly to get out of bed. Pupils alike, somewhat contracted, reacting but slightly to light. External examination of ears negative; teeth covered with sordes; tongue dry, brown; hands and feet cold and cyanosed. Nothing abnormal found on examination of lungs and heart, except slight feebleness and irregularity in action of the latter. Abdomen soft, not distended, generally resonant. No rose-spots. No apparent increase in hepatic or splenic dulness. Irritation of the skin produced the tâches cérébrales. Knee-jerk present and perhaps slightly exaggerated. No ankle clonus. No apparent hyperæsthesia, except on posterior surface of head and neck, where pressure causes facial contortions and groans indicative of pain. Further examination shows marked rigidity of posterior cervical muscles, though not sufficient to produce opisthotonos, yet sufficient to hold head in line of vertebral column, in opposition to considerable force. Catamenia present. Temperature 100.2°, pulse 81, respiration 40.

Urine by catheter: high-colored, acid, 1024, slight trace albumen, heavy sediment, excess of urates, occasional hyaline and granular casts.

In the following days she steadily failed. Though somewhat quieted by anodynes, there was almost constant movement of the arms and legs, constant incoherent delirium, which became less violent in the last day or two, and gave way to deep coma in the last six hours.

The hyperæsthesia of the cervical region continued, while the rigidity of the cervical and dorsal muscles became so marked that the position in bed was one of semi-opisthotonos; the trunk, as low as the hips, could be raised with the hand under the back of the head. The tâches cérébrales and the lividity of the extremities persisted, and large, irregularly-shaped blotches of a bluish hue appeared upon certain parts of the body. The knee-jerk was constant and somewhat exaggerated. Loss of voluntary control of the sphincters came on. Toward the end there was considerable convulsive fibrillary twitching, or perhaps better, quivering of muscles of trunk and extremities.

Temperature was never extreme. Highest on morning of death, when it was 103°.

Pulse increased in rapidity and failed in strength from the first. Last time counted was 190.

Died on the fourth day after entering the Hospital, in the tenth day of her illness.

Dr. Fitz, who made the autopsy twenty-seven hours after death, reported:

Rigor mortis present; no abnormal external appearances.

Calvaria unusually thick and dense.

Dura mater tense. Sinuses free from abnormal appearances. On removal of dura mater, the pia mater over the convexities, especially over the vertex, extensively infiltrated with opaque, yellow material, soft and friable, most abundant in furrows, but continued over convolutions. Pia mater at base showed nothing abnormal. More careful examination of brain showed small patches of sclerosis on the vertex, just below the gray matter. Behind the posterior cornu in left lateral ventricle was a cyst, the size of a cherry. Dura mater torn from base of skull: no abnormal appearances in bones of base. Roofs of middle ears crushed without disclosing abnormal appearances.

Pericardium showed no abnormal appearances, with exception of a fibrous thickening, warty in character, near the base.

Heart. Right side distended with clotted blood. Valves, cavities, and muscular substance showed nothing abnormal.

Lungs both collapsed, injected posteriorly; otherwise not remarkable.

Spleen slightly increased in size, of diminished consistency. On section, paler than normal from increase in pulp.

Kidney not remarkable in shape or consistency. On section, cortex paler than normal and more opaque.

Bladder distended with some ten ounces of urine, which was opaque and contained numerous slimy shreds; odor somewhat offensive. Mucous membrane

[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, May 9, 1888.

of bladder swollen, injected, and somewhat opaque, with numerous slimy shreds and flakes.

Uterus. The interior showed injection of mucous membrane, which was besmeared with bloody fluid. A dark, corpus hæmorrhagicum in ovary as large as pea.

Stomach, intestines, and liver showed no abnormal appearances.

Diagnosis: Acute leptomeningitis, hyperplastic spleen, granular degeneration of kidneys, acute cystitis, recent menstruation, hyperostosis of cranium.

Is this a case of endemic cerebral meningitis? If so, it is an interesting one in that it is an isolated, sporadic case, and in that the pathological lesion was limited to the convexities, the basilar and spinal meninges showing no evidence of an inflammatory condition. The granular degeneration of the kidneys and the hyperplastic spleen point toward an infection. If not endemic, then it must be either tubercular meningitis or meningitis secondary to some other purulent inflammation elsewhere. The woman's general condition, her heredity, and the post-mortem appearances fail to reveal anything of a tuberculous nature; and a most thorough search, both ante- and post-mortem, did not disclose a purulent inflammatory process to which the meningitis could have been secondary either by extension or by metastasis.

TWO CASES OF SPINAL MENINGITIS.[1]

BY HENRY JACKSON, M.D., BOSTON.

CASE I. Ellen Ritchie, five years old. Patient first seen December 26, 1887. Father and mother well: two sisters, both well. Previous health good.

Two days ago, suddenly taken sick; vomited frequently; constipation; complained of headache. The mother noticed that the head was thrown backwards. Child cried a good deal, especially when moved. Head retracted; muscles at the nape of the neck are stiff; legs are flexed, and the child cries when any attempt is made to straighten them; when the thigh is flexed, the lower leg is flexed upon the thigh; pupils normal; no photophobia; no opisthotonos.

December 29th. No return of the vomiting. Perfectly conscious, and does not cry unless she is moved, especially if lifted by the shoulders. No change in neck.

January 1st. Temperature normal; pulse rapid and irregular. Appears weaker; does not complain of headache. Takes food fairly well.

January 5th. Very weak; pulse 160, irregular; temperature 105°; no chill, and no apparent cause for the sudden rise of temperature.

January 7th. Better; pulse rapid, but regular.

January 11th. Patient seen by Dr. Rotch; no change in physical condition. Dr. Rotch thought the symptoms pointed to spinal rather than cerebro-spinal meningitis.

After this time gradual improvement in all symptoms, and on January 25th was able to walk about the room without assistance. In latter part of February, child seemed to be perfectly well.

CASE II. John Philip Irvin, fifteen months. Child seen first on February 8th: father and mother both well. It was an only child, and previous health had been good.

February 4th. The mother noticed that he staggered as he walked; his head was retracted; vomited several times; constipation.

When seen, child cried if touched; head retracted; marked pallor; pupils normal; no photophobia; no opisthotonos; when thigh was flexed upon the abdomen, the lower leg was flexed upon the thigh; dyspnœa; examination of heart and lungs negative; temperature 103.5°, pulse 140, respiration 45.

February 9th. Less dyspnœa; nurses well; no change in physical condition.

February 13th. Gradual fall in temperature and pulse during last few days; sleeps fairly; no change in the head; nurses well.

February 17th. After the temperature had been normal for a few days it again rose to 103°; pulse rapid, but of fair strength and regular. In a consultation, the suggestion was made that the symptoms might be due to rheumatism in the muscles of the back of the neck. In consequence, the treatment was changed. Massage and hot applications were made to the back of the neck, instead of cold applications. Internally, salicylate of sodium was substituted for iodide of potassium and bromide of sodium.

February 22d. Has vomited occasionally; tongue coated.

February 27th. Salicylate of sodium omitted, on account of vomiting. Child seemed weaker, though temperature was normal and pulse less rapid. No change in the condition of the head.

March 4th. For several days there has been occasional vomiting; for last twenty-four hours the child has vomited every time he nursed. Temperature 98°, pulse 200; emaciation marked; pupils normal; head retracted as since the beginning.

March 6th. Sudden drop in the pulse to 120; head more retracted; subsultus tendinum; appeared to be failing fast.

March 7th. Very weak; opisthotonos for first time; when quickly moved, general clonic convulsions; conscious.

March 8th. Opisthotonos excessive; the heels and head made almost a semicircle. Pulse 200.

March 9th. Died at 6.30 A. M. No autopsy.

In both these cases the diseases to be considered were:

(1) *Tubercular meningitis*, rendered improbable by the acute onset in each case, by the absence of any evidence of intercranial pressure, and the family history. This disease is eliminated in one case by the recovery, and rendered very improbable by the whole course of the other.

(2) *Caries of cervical vertebræ* eliminated by history and absence of any local sign of inflammation.

(3) *Rheumatism of muscles of neck.* I considered this improbable, on account of the marked constitutional disturbance, high fever, rapid pulse, and by the existence of Kœnig's phenomenon; that is, flexion of the leg on the thigh when the thigh is flexed on the abdomen, which seems to indicate spinal irritation, or, at least, peripheral irritation in the sciatic nerve.

Acute cerebro-spinal meningitis. On account of the absence of any symptom of marked cerebral disturbance in these cases, I preferred the diagnosis of acute spinal meningitis, as being anatomically more correct.

[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, May 9, 1888.

PROGRESS IN DENTISTRY.

BY W. H. ROLLINS, M.D., BOSTON.

NEW FORMATION OF DENTINE.[1]

THERE are two kinds of cells which form the dentine: The odontoblasts, which are present as a peripheral layer of closely-pressed cells, with flat ends toward the forming tooth; the fibre-cells, which are pear-shaped, and lie between the odontoblasts. The fibre-cells have two processes, one extending into the pulp, the other into the forming dentine. Unlike the odontoblasts, the fibre-cells never rest with flat ends toward the dentine. The odontoblasts form the basis substance of the dentine, and the fibre-cells the dentinal fibres.

FORMATION OF DENTINE.[2]

Dentine is formed from connective tissue, first visible as a papilla, composed of medullary tissue, holding an irregular, myxomatous network. Shortly before calcification there appear at the periphery of the papilla elongated corpuscles, which are the odontoblasts. These do not change directly into the dentine, but break up into medullary tissue corpuscles, which are then directly transformed into dentine basis substance by calcification. The dentinal fibres are direct offshoots of the odontoblasts.

FORMATION OF CEMENTUM.[3]

The cement of the teeth arises from medullary tissue, which becomes the seat of a deposition of lime salts, before any cement corpuscles are visible. In the next stage of development, these medullary corpuscles are arranged irregularly around the cement corpuscles, which have now made their appearance, and remain permanently free from deposits of lime salts during the process of calcification. The cement corpuscles send soft filaments from their surfaces in radiating lines between the medullary corpuscles. The cement corpuscles and their filaments originate from the bridges traversing the interspaces in the medullary substance.

TEETH OF RABBITS.[4]

The writer denies the presence of a layer of cementum over the enamel. He also points out the marked difference in the direction of the dental tubes. In the portion of the tooth anterior to the pulp-chamber the tubes are arranged with great regularity, running in oblique courses either downward or upward, and becoming nearly horizontal as they approach the border of the dentine. In that part of the tooth posterior to the pulp-chamber the tubes are arranged very irregularly, and not at such acute angles.

RIGHT UPPER CANINE IN LEFT ORBIT.[5]

From the left orbit of a child two years old, a tumor was removed which contained a right upper canine tooth. An examination of the child's mouth showed the usual number of teeth, and the jaws were large and perfectly developed. The author of the paper considers the case unique and interesting in its bearing on the development of the jaws, and supposes that the transposition must have taken place in the early embryo, the germ developing into the perfect tooth in its new position.

[1] Andrews in Dental Cosmos, November, 1887.
[2] Boedecker and Heitzman in Independent Practioner, p. 346, 1887.
[3] Boedecker and Heitzman in Dental Cosmos, p. 397, 1887.
[4] Abbot in Dental Cosmos, p. 605, 1887.
[5] Cousins in Dental Register, p. 342, 1887.

THE FIRST PERMANENT MOLARS.[6]

Much has been said in support of the usual practice of extracting these teeth, but their title to longevity can only be questioned under neglect. They are the keystone molars, by means of which the integrity of the arch is maintained, and without which the jaw contracts abnormally. The extraction of these teeth at an early age is detrimental to health, for it leaves too little masticating surface, and later in life they are essential to a proper poise in the distribution of the various strains to which the teeth are subjected in mastication. Their extraction leads to a tipping out of line of the other grinding teeth, so that their surfaces do not meet fairly, and on this account mastication is imperfect.

EXTRACTION AND FILING.[7]

Extraction for the relief of crowding is not wise, as it leads to worse evils than the original one. Among these evils are a tipping out of line of the teeth, so that their masticating surfaces do not come in contact, and also spaces are formed which are difficult to keep clean, so leading to early decay. Filing, as a means of preventing decay, or to enable the teeth to be filled without wedging, cannot be too strongly condemned, for the teeth come together again after a few years, and then are more crowded than before, and more difficult to keep clean, as they are in contact over a greater extent of surface. Filing, like extraction, also leads in time to the same evils of tipping out of line, with its attendant results.

ATTACHMENT OF IMPLANTED TEETH.[8]

As a result of the microscopical examination of a tooth implanted by Younger's method, the writer concludes that the inflammation consequent to the formation of the new socket produces an infiltration of osteoblasts into the cementum of the implanted tooth, which results in bony anchylosis, thus fixing the tooth firmly in place. He believes that not only the cementum recovers its life, but also the dentine of the root, his sections showing that the dental fibres were not shrunken, and that the peripheral cells of the pulp, the odontoblasts, were alive.

He suggests that the method of implantation may be used to furnish attachments for artificial teeth in edentulous mouths, and presents a case in which this treatment was successful.

ATTACHMENT OF IMPLANTED TEETH.[9]

This writer has examined microscopically a tooth which had been implanted in the mouth of Dr. Younger, who had purposely tried to prevent anything but a soft tissue union of the tooth by working it with the tongue, and occasionally with his fingers, his object being to show that the soft tissues of the new socket united with the dried membrane of the root, and that the latter regained its normal condition. Heitzman found no living tissue between this tooth and the socket, nor were any of the tissues of the tooth alive. The only attachment was by granulation tissue, which had arisen from the new socket and entered the bay-like indentations of the root, thus forming a fairly firm attachment. He states that these bay-like indentations found in the root were produced by a process of

[6] Weld in Independent Practitioner, p. 80.
[7] Davenport in Dental Cosmos, p. 413, 1887.
[8] Curtis in Dental Cosmos, p. 305, 1888.
[9] Heitzman in Dental Cosmos, p. 334, 1888.

absorption that took place after the tooth was planted. In this respect the tooth presented the same appearances which were first pointed out in this JOURNAL in 1877, as occurring in the unsuccessful cases of transplanted teeth. This investigation of Heitzman's cannot be considered as proving that there may not be a perfect union in the case of an implanted tooth. It simply shows the condition of a tooth in which the operation has not been entirely successful. Even after the root has been partly absorbed, there may be a new formation of bone on the surface, filling up the irregular cavities produced by absorption and rounding out the root, so that it is not a source of irritation. That this takes place in transplanted teeth, I showed in this JOURNAL some years ago, and the circumstances are so similar I have no doubt that it takes place in a certain per cent. of successful cases of implanted teeth, when, after a period of doubtful utility, the implanted tooth becomes firm again.

DERMOID CYST.

One of the most remarkable of dermoid cysts is figured by Homans in this JOURNAL, page 252, 1888. It contains a great number of beautiful teeth.

MICROSCOPICAL APPEARANCES OF ENAMEL IN ERODED TEETH.[10]

The granularity of the enamel is much increased in the transverse striations of the prisms and in the brown lines of Retzius. The interspaces of the enamel are either widened or obliterated. In the latter case the whole tissue appears in confusion, looking like drops of rain on a window-pane. He regards erosion as a disease of the enamel, as the dentine, when attacked, shows only a widening of the tubes which open with funnel-shaped mouths on the eroded surface.

THE BLACK FILM OF EROSION.[11]

In all cases of erosion of the teeth there is present, as a covering to the eroded surface, a thin film of epithelial-like scales, circular in outline, black in color, and firmly attached to the surface of the tooth. Strong friction with a tooth-brush and powder daily does not remove the film, on account of its firm attachment. Hutchinson is of the opinion that this film is an essential factor in erosion, but is at present unable to explain its significance.

EFFECT OF THE SUPPRESSION OF THE SALIVARY SECRETIONS ON THE TONGUE.[12]

A case is reported in which there had been no saliva for ten years. The tongue was bright red, perfectly smooth and dry. He explains the perfect smoothness by saying that the epithelium not being kept moist by the saliva cannot assimulate the nourishment furnished it by the blood and so remains stunted. Several other cases of a similar nature are mentioned in the *Lancet*, and on page 257 Harkin reports the successful use of chlorate of potash in such cases.

MULTIPLE SALIVARY CALCULI.[13]

Three salivary calculi, weighing thirty-eight grains, were removed from Bartolin's duct in a man aged seventy. They had given rise to salivation and to pain in swallowing.

[10] Underwood in British Journal of Dental Science, p. 213, 1888.
[11] Hutchinson in British Journal of Dental Science, p. 203, 1888.
[12] Dickinson in London Lancet, p. 613, 1888.
[13] Boston Medical and Surgical Journal, p. 386, 1888.

DRYNESS OF THE TONGUE IN GLYCOSURIA.[14]

This writer states that the dryness of the mouth which is such a distressing symptom in this disease is due to the strong osmotic action of the sugar in the blood.

SPASMUS NUTANS IN DENTITION.[15]

The patient a girl ten months old, when first seen, had a rotatory motion of the head; when the head was held the eyes rolled from side to side. A fortnight later, under treatment with bromide of potash, there was no improvement; but after six weeks the child was well, and had cut two teeth. There seems to be little doubt of the teeth acting as an exciting cause in this case.

TALKING WITHOUT A TONGUE.[16]

The whole of the tongue was removed for flat-celled cancer. When the wound had healed, the woman had no difficulty in speaking plainly. This case is interesting when taken in connection with others of a similar kind, as it explains in a very natural way the case of the African confessors, which is the most authentic of the various miracles of the Roman church.

About the year 466, by order of Huneric, certain Catholics, who were assembled for religious purposes, in the town of Tipasa, had their tongues torn out by the roots. They recovered however, and spoke as well as before. This is the only one of the nine miracles specified by Newman, which does not rest on merely indirect evidence.

PAIN IN THE TEMPERO MAXILLARY ARTICULATIONS CAUSED BY IRREGULARITY OF THE TEETH.[17]

The patient complained of severe pain in mastication. The teeth were sound and all erupted. None of them were tender. When the patient closed his mouth, the incisors met at the cutting edges, no other teeth touching. The molars were separated by a sixteenth of an inch. It was therefore thought probable that the pain came from the long-continued strain and pressure of the muscles and articulations as the result of attempts at mastication. A regulating plate was therefore applied with the result of bringing the under front teeth inside of the upper ones. When this result had been brought about, the molars articulated, and there was no more pain.

UNDUE PROMINENCE OF THE UPPER JAW.[18]

One of the most difficult cases for regulating is that of projecting upper front teeth, the lower incisors striking the gum far behind the upper; the usual treatment has been to extract a tooth on each side, either a first molar or a second bicuspid, and then with appliances draw back the incisors into the space thus gained. Coligan simply spread the upper arch about a centimetre in its transverse diameter, and this allowed the front teeth to fall back of their own accord. This case illustrates a tendency to which in a former report I gave the name, Progression in Teeth. It shows that the cause of the forward projection of the incisors and canines was pressure from behind. When this was removed, the pressure of the lips was enough to force back the front teeth.

[14] Dickinson in London Lancet, p. 659, 1888.
[15] Tordens in London Lancet, p. 228, 1888.
[16] Beach in Boston Medical and Surgical Journal, p. 375, 1888.
[17] Goddard in Dental Register, p. 590, 1887.
[18] Coligan in Dental Cosmos, p. 318, 1888.

TREATMENT OF ALVEOLAR ABSCESS BY INJECTING GUTTA-PERCHA.[19]

Chronic alveolar abscess is a difficult disease to treat. Almost everything has been recommended for it, and in many cases every remedy mentioned short of extraction may be tried without success. In one such case I have tried Jennings's method with success. He dissolves gutta-percha base-plate in chloroform to a thick cream, and injects the solution into the abscess cavity with a syringe.

DENTAL IRRITATION AND EPILEPSY.[20]

It is assumed that in persons subject to epilepsy, the higher nerve centres are in a state of high tension, of unstable equilibrium, so that it only takes a stimulus of definite quantity or intensity to excite the explosive discharge. To prove that the teeth, when diseased, may furnish the necessary stimulus, he gives sixteen cases in which they seem to have brought on the attacks.

ACTINOMYCOSIS.[21]

In enumerating the channels through which the fungus that produces this disease may enter the system, Eve mentions carious teeth as being of great importance. The germs may find their way not only directly through the medium of exposed or dead pulps in teeth with open cavities, but also through abrasions of the tongue produced and kept up by the sharp edges of the carious teeth. He believes the disease to be not uncommon, and thinks it has frequently been mistaken for some other form of tumor.

HEADACHE FROM WEARING ARTIFICIAL TEETH.[22]

The patient, a man in good health, had his upper teeth out and began to wear a plate. A few days after he felt a burning sensation in the roof of his mouth, which was followed by headache. On the removal of the plate the symptoms disappeared, returning whenever the plate was worn. The plate was of red vulcanite, and to be sure that the symptoms were not due to the vermillion with which it was colored a plate of black rubber was substituted, but as there was no improvement, at last a metal plate was made. This obviated the difficulty.

THE BAROMETER AND TEETH.[23]

In the majority of cases of pulp inflammation, the patients present themselves for treatment while the barometer is falling. It seems probable, therefore, that the diminished atmospheric pressure on the surface of the body leads to a distention of the superficial bloodvessels. When, as in the case of the pulps of teeth, these vessels are contained in unyielding cavities with hard walls, the distention of the vessels produces undue pressure on the nerves and so severe pain.

CHRONIC DIARRHŒA FROM WEARING A PLATE.[24]

For six years the patient had worn a red vulcanite plate. During this time he had suffered from chronic diarrhœa. On learning that the affection had begun within three months after the plate was inserted, Byrant decided this was the cause of the diarrhœa, and recommended that the patient should get on without teeth. He followed this advice and in two months was well.

ANTISEPTIC MOUTH-WASHES.[25]

An efficient mouth-wash cannot be constructed without the use of bichloride of mercury. There is no danger in using this, for in the proportion required, one part in two thousand of water, it would take one hundred days to swallow the maximum daily dose, while in point of fact there is no reason why any should be swallowed in rinsing the mouth. No doubt Miller is correct in saying that the mouth cannot be sterilized without the use of bichloride, but if we use this in a mouth-wash we must give up another eqnally important ingredient. I refer to an alkali in some form. Patients will not use any form of mouth-wash with sufficient regularity or thoroughness to keep the mouth thoroughly free from germs, and so there is always fermentation going on, and in most mouths the saliva is not sufficiently alkaline to neutralize the acids which result from fermentation, hence the need of an alkali in any form of mouth-wash which is intended to diminish decay. As bichloride and alkalies do not agree, I consider it best to use some other germicide rather than to give up the alkalies as ingredients of mouth-washes. After all, however, attention to the saliva is of prime importance, for as I have shown in this JOURNAL, if this is normally alkaline the teeth do not decay much, though in these mouths there is no reason to doubt the presence of germs with the attendent consequences of fermentation and generation of lactic acid. Where teeth are decaying rapidly the saliva is always at fault, and any treatment which does not take this into consideration will fail. It may be well to point out that a sterilized mouth is a mouth in an abnormal condition, and that the germs which are normally present in the mouth may be of some value in the economy.

KILLING TOOTH-PULPS.[26]

The ordinary way to kill a tooth-pulp is to apply a mixture of arsenic and creosote. This treatment is always attended with pain; severe and lasting some hours. Truman finds that this pain may be avoided by preparing a mixture of equal parts of arsenic and iodoform, and then after adding five per cent. of carbolic acid, applying a minute quantity to the pulp which is to be killed.

BLEACHING TEETH BY ELECTROLYSIS.[27]

The tooth to be bleached is to be flooded with acidulated water. An electrode is to be placed in the cavity and connected with the negative pole of a battery. Connect a platinum needle with the other pole and rub the needle over the surface of the tooth.

COMBINED FILLINGS.[28]

The advantages of combining amalgam and gold in the same cavity are the therapeutic effects which result, teeth which were soft becoming harder in a few months. This is due to the diminution in the intensity of thermal shocks, and to the electric relations which are the result of this combination of metals. These electric currents act as germicides, thus keeping a sterilized zone about the fillings. In the case of combining tin and gold in the same cavity, the oxida-

[19] Jennings in Items of Interest, p. 318, 1888.
[20] Brubaker in Therapeutic Gazette, p. 9, 1888.
[21] Eve in London Dental Record, p. 159, 1888.
[22] Bryant in Archives of Dentistry, page 98, 1888.
[23] Chisholm in Southern Dental Journal, page 477, 1887.
[24] Bryant in Archives of Dentistry, page 248, 1887.
[25] Miller in Independent Practitioner, page 175.
[26] Truman in Dental Cosmos, November, 1887.
[27] Ames in Ohio State Journal, p. 221, 1888.
[28] Stockwell in Dental Cosmos, p. 737, 1887.

tion which results is supposed by this writer and others to render the dentine less liable to the attacks of germs.

Various improvements and methods have been worked out during the year in connection with the operating-room and the laboratory. Among these may be mentioned a new way of casting aluminum for the plates for artificial teeth. This metal shrinks so much that it has not been available and is so light that it is difficult to make it fill the mold in casting. To overcome these difficulties it is now alloyed with a small per cent. of gold and forced into the mold by means of air pressure.

Melotte has introduced a compound of clay and glycerine which is used to take an impression of a broken-down root or for similar purposes. Then a rubber ring is fastened around this and a special fusible metal cast onto the impression. It thus becomes possible in five minutes, without leaving the operating room, to get a metal cast of the root, and by again casting on this die, to obtain a counter-die, which can be used to strike up a plate or any part of a gold crown. With the new compound blowpipe of Knapp's which occupies little room in the instrument case, it is a simple matter to make and fit a gold crown in an hour. These inventions of Melotte are of great value in filling teeth in which the walls are so thin that a metal filling is sure to be short-lived. By filling the cavity with gutta-percha and then striking up a piece of gold to cover it, we get a filling that can be inserted in a few minutes and which under the circumstances is the most durable known.

Copper amalgam made by electricity, as described in this JOURNAL, is now in extensive use in soft teeth, where its color is not objectionable. Miller has repeated his statement of last year, and claims that there is no filling so durable as one made by folding layers of gold and tin together and then wedging them into the cavity, which must *not* be dry, if the best results are to be obtained.

It is now claimed that the method of vulcanizing rubber plates for artificial teeth under steam heat at a temperature of 320°, in a copper vulcanizer, is entirely unnecessary, that as good a result can be obtained by placing the plate in a common sauce-pan, covering it with glycerine and heating to the requisite temperature. Vulcanizers have been in use ever since the introduction of rubber in dentistry. They are expensive and dangerous, a number of lives having been lost by their explosion, it is therefore fortunate that they are to be things of the past, and Dr. Anjubault deserves the thanks of the profession for not following the ordinary fashion in dentistry of patenting his invention.

Clinical Memorandum.

A CASE OF CEREBRO-SPINAL MENINGITIS OF THE PNEUMONIC TYPE, WITH PAINFUL JOINTS AND WORMS.

BY A. L. MASON, M.D., BOSTON.

THE following case is reported on account of the complications which attended it; namely, lobar pneumonia, painful joints, and worms. It is hard to see how the presence of worms can be anything more than an accidental coincidence. Dr. S. G. Webber, however, in his valuable history of the epidemics of cerebro-spinal meningitis, says that lumbricoids were found in many instances during certain epidemics in France and Italy, and were thought to be a characteristic symptom of the disease; also that the pneumonic type was especially prevalent in this country among the soldiers at the time of the War of 1812.

The patient, a delicate-looking school-boy, five years old, came to the City Hospital, October 23, 1888. Three days before, he had been attacked by abdominal pain, vomiting, chills, headache and nose-bleed, thirst, marked dyspnœa, and mild delirium.

On admission, his tongue was dry, the head was drawn far back, the cervical spines were tender, the left wrist was very painful, not swollen. Over the left lower lobe were dulness, broncho-vesicular breathing, and moist râles. There was an eruption of herpes about the mouth. The bowels were costive. Temperature 106° F., pulse 120, respiration 60.

During the next ten days the disease was at its height. Signs of pulmonary consolidation became more marked, with bronchial breathing, increased voice-sounds, and abundance of moist râles. There was retention of urine, and the cerebro-spinal symptoms, vomiting, retraction of the head, and great pain in the spine, continued.

There were no petechiæ, and the mind was generally clear. The wrist was a source of great pain, and was kept in a splint. Priapism was observed.

Toward the end of the second week of the disease, the temperature rose daily to 104°, and the pulse ranged from 115 to 125; but on the sixteenth day the thermometer showed no fever, and the pulse was 100. On this day the patient passed a lumbricoid worm seven inches long, but two or three anthelmintic doses failed to bring away others. The painful symptoms did not abate entirely, although from the sixteenth to the twenty-fifth day the temperature was normal, the pulse 100, and the respiration 25. The head ached and remained still thrown far back, with tender cervix. The chest-dulness, bronchial breathing, and moist râles continued. Constipation was marked, and there was vomiting. The patient was now considerably emaciated, but the condition of the lung continued slowly to improve.

On the twenty-sixth day, however, there was a relapse of the cerebro-spinal symptoms, which lasted until the fortieth day. More severe pain was noted, accompanied by screaming. A fresh eruption of herpes about the mouth occurred. The temperature ranged between 96.5° and 103°, the pulse between 110 and 130.

At the end of six weeks it was noted that the child began to take considerable milk and had a bright expression. Retraction of the head was less marked, and he slept well.

A week later, although greatly emaciated, he was calling for food, had no more pain, and the head was freely movable. After nine weeks he was up, gaining in flesh, strength, and color. The legs were weak, and there was slight want of control. A little dulness remained in the left back.

January 3d. The record says: He plays about the ward all day. Rapid gain in flesh, strength, and color. Bowels move daily. Appetite good, sleeps well, no cough.

A week later he was discharged, well, after eleven weeks in the Hospital. The only drug which ap-

peared to be of service was morphine, which was frequently given in doses of ten to twenty minims of the officinal solution. Brandy, also, was freely administered.

Two months later the child was brought back to the Hospital with a recurrence of the cerebro spinal inflammation, which resulted fatally in three days. Headache, marked retraction, and opisthotonos were observed. These symptoms were said to have followed a fall upon the head. No autopsy was permitted.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

REGULAR meeting, Wednesday, May 9, 1888.

DR. T. M. ROTCH exhibited the wood-cut of a slate pencil which was brought to him by Dr. Morrison, of Providence. The case came under the latter's care and was briefly as follows: a boy seven and one-half years old, fell, as he was going to school, on a new slate pencil which had been sharpened. The pencil entered the thorax in the fourth left intercostal space, and went into the chest to the point where it was broken off, a length of about four and one-half inches. From the position, and the length of the pencil, it was considered that it must have entered the heart. The child presented symptoms such as one would get in perforation of the heart, according to the recorded cases. The pencil was extracted, and the boy at once fell into a state of collapse with cessation of pulse and respiration, and it was thought that he was dead; but after somewhat protracted efforts at artificial respiration, reaction ensued, and the child after passing through an acute attack of pericarditis with effusion, recovered.

DR. C. W. TOWNSEND read a paper on

ENDEMIC CEREBRO-SPINAL MENINGITIS.[1]

DR. HENRY JACKSON reported

TWO CASES OF SPINAL MENINGITIS.[2]

DR. HENRY B. JACOBS reported

A CASE OF CEREBRAL MENINGITIS.[3]

DR. T. M. ROTCH said: I think the ground has been very thoroughly gone over by Dr. Townsend in his paper. The cases were of a great deal of interest to me; I had an opportunity of seeing them with Dr. Townsend and Dr. Jackson. The temperature in cerebro-spinal meningitis, I think in many cases of children at some time of the day or on certain days will be found to be markedly high and the pulse quick. In that way we will have valuable aids in making the diagnosis between tubercular and cerebro-spinal meningitis. The other points of diagnosis, as to to the slow onset and the hereditary taint, are, I think very fallacious. We have to take into consideration at the same time the age of the patient; especially when the spinal or the tubercular meningitis occurs in the infant. The younger the infant, the more does the tubercular meningitis approach the form of ordinary meningitis, and in the beginning it is almost impossible to differentiate them. That is, the type differs somewhat, according to the age, and very often we do not have a slow onset in the young child. The temperature as a rule, is not so high in the tubercular as in the cerebro-spinal form. The latter disease probably represents at times as high a temperature as almost any disease where recovery takes place.

I am sorry that I was not able to bring the chart of a case where the temperature ranged from 107 to 108 for a long period of time, with the final recovery of the child, but with lesions, apparently, of the brain, which kept the child from developing as rapidly as other children do; but finally, I believe, he came out a bright boy. There were some motor disturbances, remains of which are still to be found in this case. The second case of Dr. Townsend, which I think I also saw with him — the one that extended over a period of months — is interesting to me in relation to Henoch's idea that there is a separate spinal meningitis, differing from the epidemic infectious meningitis, and that the cases all recover. I followed, with Dr. Townsend, this case with a good deal of interest, but it finally died, although it seemed to follow out the typical symptoms described by Henoch. And I very much doubt whether there is really a different disease. I think rather it is a separate phase of the general disease.

In speaking to Dr. Jacobi a few weeks ago, when he was here, he said that he had seen these cases where there was an epidemic, and he also doubts whether there is any separate disease.

Dr. Jackson's second case was also interesting. I very kindly did not speak of my having seen it. I have seen cases where I have often made mistakes in children, in the first two years, where it seemed as if they did have meningitis, and yet where they were favorably affected by salicylate of sodium and turned out to be rheumatism; that is, the extremely hyperæsthetic condition which is very likely to be present in cerebro-spinal meningitis is exceedingly difficult to differentiate from the hyperæsthetic condition of muscular rheumatism, in young babies. When young babies have rheumatism, it affects them much more violently than the older child. Even a slight rise of temperature will cause nervous symptoms which very closely simulate the symptoms of meningitis. There is at times retraction of the head and of the legs, and in this case of Dr. Jackson's, it was not at all certain that we had Kernig's symptom. As the case turned out, I think it was probably cerebral meningitis. I think it is right, however, to recognize that it is at times difficult to differentiate these cases.

DR. FOLSOM: I have little to say, Mr. Chairman. I had one of the largest dispensary districts at the time of the epidemic of cerebro-spinal meningitis, sixteen years ago, and I saw quite a number of cases. There are two or three points regarding diagnosis, to which no allusion has been made this evening, which seem to me to be very interesting if we are to be on the lookout for these cases now, for it may be coming around again. In the early stage of the disease the persistent retraction of the head, the opisthotones, is not always to be found. In fact, it is sometimes quite a late symptom. If I remember correctly, whenever autopsies were made the lesions were found at the base of the brain, and in the cervical region,

[1] See page 52 of the Journal.
[2] See page 58 of the Journal.
[3] See page 57 of the Journal.

and in the lower dorsal and lumbar region, a great portion of the dorsal region sometimes being quite free, and never being involved to the same extent as the other portions. In all the cases which I saw there was very great pain on motion in the lower dorsal and lumbar region. In the earlier stage of the disease, and in a great many cases throughout the disease, where there was no opisthotonos, and where there was no marked retraction of the head, I found that in attempting to move the head from one side to the other, without moving the shoulders with the head, very great pain was caused. In the same way, in trying to twist the trunk on the pelvis, great pain was caused.

My experience about the temperature has not been the same as Dr. Rotch's. From 102° to 103° has been the most common highest temperature. If I remember correctly, none of my cases went beyond 104.° At all events, the temperature was very much lower than the temperature in typhoid fever. It is possible all do not know that during the war this disease was very troublesome, and was very often diagnosed as typhoid fever, and one of the points in diagnosis was that the temperature was not so high as in typhoid. There is another symptom which I remember occurred very frequently in the early stage of many of my cases, and that was very severe violent pain in the epigastrium. I do not remember whether it is mentioned in the text-books as one of the symptoms or not, but it is mentioned in some of the monographs on the subject. The pain may come on very suddenly, and with the very greatest degree of violence, the individual having appeared so well within a short time that it is very difficult to account for it. I remember one case of a gentleman whom I saw, who, before I saw him, had been supposed to have been poisoned by corrosive sublimate. He was at a barber's, and had been shaved, and the barber so far as he saw noticed absolutely nothing about the gentleman. He went immediately to the water-closet, from the barber's, and failed to appear a half an hour afterward, when a gentleman came to the hotel to keep an appointment that he had made with him. It was found that he was last seen going to the water-closet. The door was locked, and there was a confused sound within. The gentleman was found partially conscious with a severe pain in the stomach. It had been supposed to be poisoning of some kind, and he had been treated with white of egg, etc. It was a typical case, throughout, and the gentleman finally got well.

It seems to me that it is a matter of very great difficulty to differentiate the disease from tubercular meningitis in some cases, and it seems to me that the most constant point of variation is the fact whether or not the lower dorsal and lumbar region is involved. As I say, of my cases that was a constant symptom. Whether it is always otherwise in tubercular meningitis or not I do not know, but in the only case where I have had any very great doubt, there was no pain in the lumbar region until after a week of the disease; but there was tenderness and it amounts probably, I think, to a diagnosis of cerebro-spinal meningitis. So it seems to me, but still the case is in doubt. As I say, in my experience there has not been that marked difference in the temperature which Dr. Rotch has observed. So far as I have seen, the temperature may go on very nearly alike, with no more than a degree or so of difference.

DR. ROTCH: It was in reference to children that I was speaking. The temperature does not run so high in adults, but in young children it is often, as I said before, remarkably high at certain times and by its variation is valuable for differential diagnosis, from typhoid which presents a more uniformly moderate temperature, and is a mild type of the adult typhoid.

DR. VICKERY: There is one question that I would like to ask: In Henoch's intermittent form, do the cases all recover?

DR. TOWNSEND: In the cases that occurred in Berlin they all recovered. In some of the cases reported by Smith and one or two others, recovery did not take place.

DR. VICKERY: Take such a case as your own; would it not be very hard to exclude tubercular meningitis?

DR. TOWNSEND: I think that, with such a long continuance of the disease, three months, there would have been signs of tuberculosis elsewhere.

DR. VICKERY: That is the point on which the diagnosis rests.

DR. TOWNSEND: That, with the exact correspondence with the cases reported by Henoch and others, in the characteristic symptoms; and also the presence, in my case, of an eruption, which you would not find in the cases of tubercular meningitis.

DR. PUTNAM: I would like to say a single word. Dr. Mills, of Philadelphia, who is an accurate observer, has recently called attention to observations that he has made in one or more cases of cerebro-spinal meningitis, that the symptoms showed apparently the presence of multiple neuritis, as it has been described of late, apparently complicated with them; that is, a portion of the symptoms were identical with multiple neuritis, and that seems to me of interest, in view of the fact which has been alluded to, that the signs which have been considered characteristic, the contraction of the head and opisthotonos, sometimes scarcely occur at all, and often not until quite late, so that a mistake in diagnosis from this cause might arise; and it is also, I think, interesting from the fact that, even in the Northern climates, multiple neuritis is occasionally an infectious disease.

DR. JACKSON: I would like to ask Dr. Folsom if you often find in cerebro-spinal meningitis the symptoms of intra-cranial pressure which are quite common in tubercular meningitis, the strabismus and the change in the rhythm of respiration, due to pressure?

DR. FOLSOM: There was not strabismus except in late cases, but there was a change in the rhythm in the severer cases. With regard to the temperature, the majority of my cases were children.

DR. MASON: I had occasion to look up this subject a little, four or five years ago, after seeing a few cases, and reported five cases in the *Medical Journal*; and in these cases, which were all in adults, the temperature did not rise to any great height; 103°, I think, was the highest. One or two of them were very little above the normal. The pulse, also, was low, from 60 to 100, rising in no case above 100, except near death in one or two cases which were fatal. It became very rapid, of course, before death. Probably, in infants, the symptoms are more acute. When effusion has taken place, after a few days, I presume that the marked physical depression which follows is due to pressure on the brain and spinal cord, and in one instance which I recall, in a man, the temperature fell

to 96.2°, and remained below normal for some time, the pulse rising gradually until death; and in one case, also, I noticed symptoms which led to the supposition, as Dr. Folsom remarks, that there might have been mineral-poisoning, so that a stomach-pump was thought desirable. It was not used, however.

In the case reported, where there was no inflammation of the cervical meninges, I think it would be difficult to make a positive diagnosis of cerebro-spinal meningitis. Last fall we had a case at the City Hospital, one of the four or five which have occurred there in the last four years of this disease, in which the affection assumed the pulmonic form; that is, there was an acute lobar pneumonia of the left lower lobe, with retracted head and all the characteristic symptoms of cerebro-spinal meningitis. There was herpes on the lips, and, in fact, the child presented the typical appearance of cerebro-spinal meningitis, and got well after ten weeks. He went out of the Hospital apparently perfectly well, and in a few weeks more came back with a relapse, and died with opisthotonos and all the characteristic symptoms renewed. Unfortunately, there was no autopsy. These few cases are the only ones that I have seen for several years; and out of some thirty or forty cases of cerebral meningitis at the Hospital, I think there were but four or five of this disease. I have nothing more to say, except in relation to the epigastric pain. In my second case I spoke of that pain; but the child had been treated for abdominal disease before I saw it, and applications had been made to the abdomen.

(To be continued.)

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

W. H. TAYLOR, M.D. SECRETARY.

The eleventh annual meeting was called to order at 12.15 P. M., by President Winsor, at the rooms of Boston Medical Library Association, June 12, 1888. Present, sixteen members.

The Treasurer made his report, showing a balance of $26.85 in the treasury at date. The report was accepted, and an assessment of three dollars for the current year was declared.

The President appointed a committee of three to nominate a list of officers for the ensuing year. The committee reported the following list which was unanimously adopted:

President, Med. Exr. J. G. Pinkham, Lynn; *Vice-President*, Med. Exr. A. F. Holt, Cambridge; *Corresponding Secretary*, Med. Exr. B. H. Hartwell, Ayer; *Treasurer*, Med. Exr. C. C. Tower, South Weymouth, *Recording Secretary*, Med. Exr. W. H. Taylor, New Bedford.

President Pinkham thanked the Society for the honor conferred on him, and made a few remarks concerning the best ways of forwarding the Society's interests. The President appointed the following gentlemen Standing Committee for the ensuing year: Med. Exrs. Draper, Presbrey, and Winsor.

Voted, On motion of Med. Exr. Draper, to empower the Standing Committee to bind the Transactions of the Society in a suitable manner.

Med. Exr. Holt deplored the inactivity of members in the matter of presenting papers, and hoped that members will feel it their duty to the Society to make efforts to increase the interest of the meetings.

Voted, On motion of Med. Exr. Winsor, that the subject for discussion at the October meeting be Poisoning by Arsenic, and that members be notified of this vote as early as convenient.

Med. Exr. Winsor made some remarks regarding his term of office as President, and read an interesting account of

A DISPUTED CASE OF ACCIDENTAL DROWNING.

The death was probably due to an epileptic attack while bathing. Certain questions of violence arose in the minds of the public, and an autopsy was held by private parties, without definite result as to determination of cause of death. A prominent question in Dr. Winsor's mind was, whether he should have made an autopsy to satisfy public sentiment, believing as he did, that the case was purely one of accidental drowning.

In the discussion which ensued, Med. Exr. Morse reported a case of an epileptic who met his death by drowning while in an attack.

Med. Exr. Holmes reported a case of drowning in a tub, the subject being a child of twenty-one months, and the water but one and three-quarters inches deep.

Med. Exr. Presbrey reported a case of drowning in a little rill of water from melting snow, the locality being dry when the body was discovered.

Med. Exr. Taylor reported a case of drowning in a little water contained in the imprint of a horse's hoof in mud, which subsequently became frozen.

Med. Exr. Wright reported a case of a man who vomited the contents of his stomach, and, lying face downward, was literally drowned in the fluid.

Med. Exr. Holt believed that the office of medical examiner was created in the interest of the public and not that of the official, and would make autopsy in any case where public sentiment demanded it.

Med. Exr. Paine reported a case of drowning showing necessity of an autopsy.

The subject was further discussed by members Holmes and Morse.

Recent Literature.

Intubation of the Larynx. By F. E. Waxham, Professor of Otology, Rhinology and Laryngology, College of Physicians and Surgeons, Chicago. Pages 110. Published by Charles Truax, 75 and 77 Wabash Ave., Chicago, 1888. Price $1.25.

This small volume, upon a most important subject, should be read by all who are likely to be called upon to treat laryngeal stenosis in children. It should be read especially by those surgeons who are still sceptical regarding the merits of intubation. The whole subject, as it is understood to-day, is in this volume, presented clearly, concisely and with authority, by Dr. Waxham. In speaking of the comparative merits of intubation and tracheotomy the author says that "by reference to the comparative statistics of these operations, it will be seen that intubation is not secondary in importance to tracheotomy, for not only are we permitted to operate where tracheotomy would not be allowed, but after operating we can then save as large a percentage of cases at all ages, and a much larger proportion under the age of three years." There can be no stronger argument in favor of intubation than this. The book is well printed and illustrated.

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THE MASSACHUSETTS HEALTH REPORT.

THE nineteenth annual report of the State Board of Health of Massachusetts falls nothing short of the highest standard of the Board's work during the many years of its usefulness. It is so compact with information on matters pertaining to the public health, that no abstract or review can do justice to it.

Of recent legislation the most important is the Act of 1886, to protect the purity of inland waters, by which the general oversight and care of such waters was committed to the State Board of Health. Under this act the Board was authorized to employ such experts as were necessary for carrying out its provisions, to recommend legislation and suitable plans for main sewers, to report its proceedings under the act, and to submit estimates of expenses. It was also required to make examinations of such waters with reference to their domestic use, and authority was granted to conduct experiments for determining the best practicable methods of sewage purification and disposal. The Board was also required to consult with and advise the authorities of cities and towns, and also corporations, firms and individuals, with reference to existing or proposed systems of water-supply and sewerage. To these ends the Board has organized: (1) A series of chemical analyses of all the domestic water-supplies of the State; (2) Examinations with reference to the presence of the various forms of vegetable life; (3) Bacteriological investigations; and (4) Experiments to ascertain the comparative value of various soils for sewage irrigation. The work already done, both scientific and practical, under this law, occupies over a hundred pages of the report and prepares the way to a solution of some of our most difficult sanitary problems.

During the year there were examined 4,870 samples of food, of which 35.05 per cent. were found to be adulterated or not conforming to the statutes, including 3,080 samples of milk, of which 38.33 per cent. was below the standard or adulterated. Of 550 samples of drugs, 400 were of good quality. In the five years, 1883 to 1888, of the operation of the act, the percentage of adulteration found has been reduced very materially, and in milk from 83.9 to 38.33.

An extended report on oleo-margarine shows that it is probably not quite so digestible as butter, very nearly as nutritious and not so readily becoming rancid; that it is wholesome if properly made of good material, but that if sold as butter there is a commercial fraud, by virtue of which the purchaser pays for what he does not get—a not uncommon deception. No evidence was found of adulteration or of use of uncleanly or unwholesome material, coloring matters only causing deception as to quality.

Weekly mortality reports are sent to the Board from the larger cities and towns representing a population of 1,100,000, or a little more than one-half the population of the State. They have been of exceeding value as stimulating local authority to accurate registration. In his summary of them, Dr. Abbott has been enabled to present some comparisons of mortality by weeks, not possible in his *résumé*, in the health report, of the salient points of the registration report of vital statistics.

Dr. Pinkham's excellent article on the ventilation of school-rooms heated by stoves, shows such excellent results, that we suspect much of its success to be due to the supervision of so expert a sanitarian. But it might do much less well and be well worthy of imitation.

An unusual immunity from infectious and contagious diseases is reported for the year, and although the Board made several investigations with reference to special outbreaks, the results went chiefly to show carelessness in disposal of filth or in allowing too free communication between the well and the sick, and to repeat the often-learned lesson of the need of vaccination.

A further investigation which is being made into the subject of trichinosis in swine, and tuberculosis in cows, is referred to in connection with a proposed investigation by the Massachusetts Society for the Promotion of Agriculture.

HYPERTENSION OF THE ARTERIES: THERAPEUTIC INDICATIONS. I.

AN admirable study of the subject of arterial hypertension, by Henri Huchard, of Bichât Hospital, has recently appeared. It is now a well-recognized fact that in diseases of the cardiac and blood vascular system there exists an important distinction between the *valvular* cardiopathies and the *vascular* or *arterial* cardiopathies: — the first beginning at the orifices of the heart and being characterized by a tendency to lowering of the arterial tension; the second having the arteries for their origin, and being characterized by a tendency to hypertension of those vessels.

Huchard establishes two divisions of hypertension: (1) temporary, (2) permanent. To the first head,

cases like this belong: A woman, aged sixty years, affected with *arterial* cardiopathy (arterio-sclerosis of the heart), of arythmical form and without any souffle, entered the hospital for violent attacks of pseudo-cardiac asthma. Crises of dyspnœa came on paroxysmally every evening, lasting nearly all night, there were no signs of pulmonary œdema or congestion. Sphygmo-manometric observations showed a considerable augmentation of the arterial tension; and auscultation discloses a *marked diastolic resonance* of the aorta, a sign to which Huchard attaches much importance. The precordial shock was energetic; the heart beats were strong, though arythmic; the pulse was close, concentrated (that is, not easily felt under the finger), almost vibrating, and a little irregular. The urine was normal. This patient had been dosed with digitalis, to the great aggravation of her symptoms. Under a treatment calculated to reduce vascular pressure (blood-letting and an exclusive milk diet) she became better, and left the hospital in a fair state of recovery.

Huchard contrasts this case with another which came before the hospital clinic, about the same time, and which was diagnosticated as *valvular* cardiopathy, and in which there was marked mitral constriction and insufficiency. The pulse was "feeble, compressible, unequal, irregular, intermittent and rapid;" the lungs were congested at both bases; the right cavities of the heart were dilated; and there was a dyspnœa which was constant, though paroxysmally worse at times. Here the sphygmo-manometer revealed depressed arterial tension. The indication was clear — the cardio-vascular tonus was to be raised, and digitalis proved as beneficial in this case as it was detrimental in the foregoing.

"Everybody knows" adds Huchard, "that not all palpitations are tributary to digitalis;" and the same may be said of cardiac dyspnœa, which is sometimes relieved by nitro-glycerine when the so-called heart-tonics fail. The same general truth applied to some cases of metrorrhagia or hæmoptysis where there is high arterial tension, and where ergot and digitalis, by aggravating this tension, favor the hæmorrhage rather than check it. There we witness the triumph of sedatives and calmatives (such as opium and ipecac), of tri-nitrine, of nitrite of amyl, of aconite, of the iodides, all of which lessen arterial tension. We get, moreover, a hint in explanation of the want of success which sometimes attends the treatment of epistaxis in young people and in arthritic persons by perchloride of iron and ergot. We see also why the palpitation of the anæmic and chlorotic are aggravated by digitalis and the usual tonic treatment of these cases. Here there is the element of vascular spasm to combat, and the immediate consequence of vascular spasm, hyper-arterial tension.

Huchard has some good remarks, in connection with the subject of chloro-anæmia, respecting the exaggerated excitability of the vaso-moter system in these patients, as evinced by the coldness of the extremities, the localized attacks of algidity and ischæmia, the frequent alternations of pallor and redness of the face, the emission of clear, limpid, and abundant urine, etc. The functional murmurs at the mitral and tricuspid orifices are of great interest, and are due (according to Huchard's explanation) to arterio-capillary spasms and consequent temporary dilatation of the heart's cavities and orifices.

Into the subject of true angina pectoris (in which arterial tension is permanently exaggerated) and the pathogeny of this disease, as well as other conditions characterized by permanent hypertension, we have not space to enter in this number.

ON THE VALUE OF SALOL IN THE TREATMENT OF ACUTE RHEUMATISM.

Dr. J. Rose Bradford, of University College Hospital, publishes the results of sixteen cases of rheumatic fever treated with salol.

The cases were all of average severity; temperature from 101° to 103°. In two of the cases, pericarditis and endocarditis resulted; in one of them there was an attack of hyperpyrexia (temperature reaching 110°) before the pericarditis. The salol was given in the most severe cases in doses of ten grains every hour till the temperature came down; in cases of moderate severity, the dose was ten grains every two, three or four hours. It was sometimes given in milk, sometimes in plain water, sometimes in soda-water.

Dr. Bradford's conclusions are as follows: (1) As an antipyretic, salol is decidedly efficacious in rheumatic fever, its use being followed by a rapid fall of temperature within twenty-four hours from the commencement of its administration. To produce this rapid fall, as much as ten grains every hour should be given. It does not, however, prove to be quite as reliable, as an antipyretic, as salicylate of soda. (2) It is inferior to salicylate of soda in relieving the joint pains. (3) Cases of relapse are just as likely to occur after salol, as after salicylate of soda. (4) Salol is superior to salicylate of soda in not producing, to as great an extent, the deafness, noises in the head, etc., so common with the latter drug. Salol is better tolerated by the stomach than salicylate of soda, nor is it so likely as the latter to produce unpleasant toxic symptoms. Its administration is sometimes attended with carboluria: this is explained by its chemical composition, salol being a compound of salicylic acid and phenyl.

Dr. Bradford adds, in conclusion, that the results obtained with salol are simply those that would be expected on the supposition that it owes its activity solely to the salicylic acid it contains. The fact that deafness, noises in the head, etc., are not so common after its use, is simply because less salicylic acid is given. Its one advantage appears to be that its taste is more pleasant; but this is of comparatively small moment, as the taste of sodium salicylate can be effec-

tively covered. The latter, moreover, has been successful in cases where salol has failed, and has proved more effective in relieving the joint pains.

MEDICAL NOTES.

— The alarming complications which may attend even the mitigated form of the duello which prevails in France, is illustrated by the following paragraph which was thought worthy of being telegraphed under the Atlantic to a morning paper:

"There seems no reasonable doubt of Boulanger's recovery within a fortnight or so, although his wound appears to threaten him with all sorts of unpleasant complications, such as lockjaw or the less familiar complaint of embolic, caused by clots of blood in the bronchial tubes, or, what is still rarer, suffocation by hæmaturia in the respiratory channels."

— At the Commencement Exercises of Union College, June, 1888, the honorary degree of LL.D., was conferred upon Mr. Lawson Tait, F.R.C.S., Professor of Gynecology, Queen's College, Birmingham, England.

— Cases have lately been reported in the *Journal of the American Medical Association* of acute rheumatism in infants of eleven days and two months of age, respectively.

— We learn from the *Lancet* of the use of a new material for absorbing and deodorizing fæcal matter and urine, namely, common slag, for the efficiency of which strong claims are made. Its cost is small (five to ten shillings per ton, including crushing and carriage), and it is said the quantity necessary for accomplishing the defecation of sewage is a third less than of ordinary dry-earth. Its method of use is like that in the common earth-closets, and a sample which had been in use for five weeks, gave no smell whatever.

— Dr. Austin Flint, of New York, has recently written on the natural history of the medical student. He classifies the specimen thus: (1) Good students, forming 25 per cent. of the graduates, and marked 80 per cent. or upwards on their examination; (2) The *average*, being 45 per cent. of the graduates, and attaining marks of 70 to 80 per cent.; (3) The poor, forming the other 30 per cent., some of them approximating very closely in scholarship to the plucked. Such, he says, seldom do any credit to themselves or their profession.

— It will be remembered that the late Mr. Roscoe Conkling developed his fatal mastoid disease soon after protracted exposure in the "blizzard" of March last. Dr. Frank Allport, of Minneapolis, Minn., writing in the *Northwestern Lancet*, says that during a practice of five and one-half years in that city, and with a total number of seven hundred and sixty-two ear cases, he has opened the mastoid twenty-five times, always finding pus. Comparing this proportion with that observed in other cities, Dr. Allport concludes that the climate of Minneapolis, with its enormous extremes of temperature from winter to summer, has a special tendency to produce mastoid disease as it has towards catarrhal affections generally.

— A London correspondent of the *Journal of the American Medical Association* quotes Sir Andrew Clark as having made the remark: "I worked twelve years for bread, twelve years for butter, and twelve more for the luxuries of life." Sir Andrew, the other day, received a fee of £5,000 for going to Italy. Sir Andrew Clark's first acquaintance with Mr. Gladstone arose in connection with his visits as Mr. Clark to Mr. Gladstone's Convalescent Home, since when they have been great personal friends. He is stated to have been one of the first to adopt the plan now general in London, of writing out elaborate dietaries for his patients.

— *The London Medical Recorder* gives the substance of a parliamentary paper, issued by the Home Office, containing a report showing the number of experiments performed on living animals during the year 1887, under license, distinguishing painless from painful experiments. The total number of persons licensed to perform such operations in England and Scotland was 82, all (save one foreign graduate) graduates of a British university or fellows or members of royal colleges. Of these 64 exercised their right. The buildings where such experiments are allowed to be made are twenty-six in number — nine in London, nine in the provinces, eight in Scotland. The number of experiments was 1,220, of which 582 were performed without anæsthetics. These were, with very few exceptions, simple inoculation experiments, and were consequently painless. The experiments were — physiological, 237; pathological, 703; or therapeutical, 380. The number of cases in which pain has been unavoidably inflicted during experiments conducted under certificates dispensing with anæsthetics, or with the killing of the animal on recovery, was 71 — 2 being physiological, 21 pathological, and 48 therapeutical. Comparatively few vivisections, properly so called — that is, involving a distinct surgical operation on a living animal — were practised during the year. In all cases in which such experiments have been performed under the certificate dispensing with the slaughter of the animal before recovering consciousness, it has been made a condition that the wound should be rendered painless by antiseptic treatment, and, that failing, that the animal should be destroyed. This condition has, the inspector believes, been faithfully fulfilled. The animals on which pain was inflicted were two cows, 12 calves, 1 cat, 32 rabbits, and 24 frogs. In Ireland there are only four persons licensed and the experiments (11 in number) were all painless.

NEW YORK.

— The first trip of the St. John's Guild Floating Hospital this season was made July 9th, and it is announced that four trips will be made each week, instead of three, as heretofore. Since last year $7,000 has been expended by the Guild on improvements, a large bath-room, with seven tubs having been fitted up

on the hospital boat, and a new wing having been added to the Seaside Hospital.

— A dispensary for the treatment of diseases of the nose, throat and lungs, has been organized in Brooklyn. The medical staff is to consist of Dr. Sidney A. Fox, physician in charge; Dr. Thomas R. French, physician for diseases of the throat and nose; Dr. Benjamin F. Westbrook, physician for diseases of the lungs; and Dr. George R. Fowler, consulting surgeon.

— Dr. T. Matlach Cheesman, a prominent New York physician, died at his country-seat at Ridgefield, Conn., on the 7th of July, in the sixty-fourth year of his age. He was for many years connected with the 7th Regiment, and during the late war he served with distinction in the medical corps of the army.

Miscellany.

METHODS OF DISINFECTION AS TESTED AT THE QUARANTINE STATION BELOW NEW ORLEANS.

No scientific report published by the government this year has been more important than that just made by Dr. J. J. Kinyown, assistant surgeon at the Marine Hospital Service, upon the germicidal powers of the different methods of disinfection practised under the direction of the Louisiana Board of Health at the quarantine station below New Orleans, of which we find a summary in *Science* for July 13th. The report is important, not only because it shows the degree of protection against the importation of infectious diseases through the important port of New Orleans; but also, since the methods of disinfection practised at other quarantine stations are similar to those in use there, the experiments show approximately the efficacy of each mode of disinfection, and suggest changes that should be made in their use. The three methods of disinfection tested were by the use of bichloride-of-mercury solution, the application of dry and moist heat, and fumigation with sulphur dioxide. Dr. Kinyown finds the first of these methods defective, because of the difficulty of getting the disinfecting-agent into cracks and corners, carpets, rubber goods, the under sides of decks, and into lockers, etc. He discovered in all these localities and articles that the micro-organisms existing before the disinfection had not been destroyed, and he found them as plentiful on the floor of the forecastle of one ship, that was exceptionally filthy, after it had been drenched with bichloride of mercury for an hour, as before. Dr. Kinyown recommends, that, in order to make this mode of disinfection more effectual, the bichloride of mercury be applied with a spray produced by a connection with a steam-boiler, and that it be applied after fumigation by sulphur. The results from the application of dry and moist heat were the most satisfactory of all. Cultivations of various disease-germs exposed to a dry heat of 80° C., and afterwards to steam at a temperature of 100° C., were, with few exceptions, destroyed. Dr. Kinyown thinks, that, in order to secure absolute protection, the heat should be made greater and the time of exposure increased. In eleven experiments seventy-four disease-germs were placed in vessels among articles to be disinfected by the use of sulphur dioxide, but only sixteen of the whole were destroyed, or less than twenty-two per cent. Dr. Kinyown has very little to say about this method of alleged disinfection, except to recommend that the sulphurous fumes be applied in larger quantities, and confined in the apartments to be disinfected a longer time. But he reports his experiments in full, and lets them speak for themselves. The net result of these tests is to show that some disease-germs escape even when the most effectual modes of disinfection practised at quarantine below New Orleans are resorted to, and that less than one-fourth of them are killed when the least effective method is used. It may be assumed that quarantine and city health officers everywhere will profit by the suggestions of this report, and that the public will be better protected in the future than in the past.

TUBERCULOSIS TRANSMITTED BY THE MILK OF A PHTHISICAL COW.

A remarkable case has been recorded by Denune, of Berne, in which an infant became infected with tuberculosis through the milk which had been obtained from a phthisical cow. The details of the case are as follows: An infant, aged four months, belonging to a family whose history was absolutely negative in regard to tubercular affections, died of tuberculosis of the mesenteric glands, a fact which was confirmed at the post-mortem examination. The glands alone contained the characteristic bacilli; the latter were not even to be detected in the intestinal mucous membrane, and no bacilli were found in any other part of the body. The child was fed with the milk of a cow which was especially kept for the purpose. The cow for the purposes of examination and inquiry was slaughtered, and a careful post-mortem made of its carcase. The left lung and pleura of the animal were found to be studded with tubercle, and in the tubercular nodules, bacilli were easily found. The milk was then submitted to a minute investigation, but bacteriological examination at first yielded negative results. Finally, however, tubercle bacilli were detected in portions of the liquid expressed from the deepest parts of the mammary gland. The case is an important one from several points of view, and claims attention by reason of its bearing upon the so-called hereditary transmission of tuberculosis. If, instead of a human infant, a calf had in a natural manner fed itself, with milk from its mother's udders, we can hardly conceive otherwise than that the calf would have similarly become infected with tubercle. Assuming such to have occurred, the case would obviously have been regarded as one of the hereditary transmission of tubercle. But taking the supposition that a woman suffering from phthisis suckles an infant, there seems to be no reason why the same result should not occur, and why, like the infant and the cow, to which reference has been made, the mother should not transmit the bacilli by means of her milk to her offspring. All this appears to be possible enough, and has, perhaps, even occurred in some cases without the fact having been proved by demonstration. — *Medical Press and Circular*, June 27th, 1888.

THE INEQUALITIES OF MEN.

M. LAPOUGE of Montpellier, has recently delivered before the Faculty of National Sciences in that town a series of lectures on inequalities among men, in the course of which he said that the political dogma of equality rests on hypotheses which are utterly false. He distinguished four social types among mankind, which are thus summarized it the *London Medical Recorder:* (1) The initiators, who show mankind the way into the region of the unknown, and who go in front. Restless and daring, with an intelligence which is at least equal to the average, men of this type do not travel readily along beaten tracks. New ideas are the breath of life to them. They spend their lives in new creations; they are often wrecked, but the true genius represents the most perfect form of this type. (2) Men of spirit, of intelligence, who, possessing no creative power themselves, yet carry out and perfect the ideas and discoveries of the first type, to which they are really the complement. (3) Men who, with much or little intelligence, can work only with others, who mistrust every new idea not accepted by all the others, but who seize it with avidity when their neighbors adopt it. If intelligent, these men are docile, but they dislike every change in routine, and they represent the dulness of the mass in the face of every reform. (4) Men of this type are not fit to attain even the smallest step in culture. Evidently every man cannot be classed under one or other of these divisions. In human societies clear lines of demarcation do not exist, but for general purposes the distinction is sufficiently evident. The superiority of a race or nation depends on the greater or smaller number of men of the first two classes. The race which is richest in the first type is the blonde dolichocephalic, and this has been the case even when the people among whom they lived were not of this kind. In Egypt, Chaldea, Assyria, Persia, and India, and even in China men of this type ruled. In the Greek and Roman world it was the same, and it is so still. In our own day the rank of a nation corresponds with the strength of the blonde dolichocephalic element. The Gallic and Frank elements which made France great were of this type, and it plays the same part in England, Germany, and America. Near these came the Semitic and Mediterranean races, who had reached a high grade of civilization when the blonde dolichocephalic peoples were still savages. The remainder of mankind must be reckoned the passive races. The brachycephalic races of Europe, the Celto-Slavs, rarely produce men of the first intellectual type. In the social changes of recent years brachycephalic men, who form the lower classes, have been elevated and brought forward, and herein, the lecturer thought, lies the great danger of the future deterioration of the French nation. The existence of the superior blonde dolichocephalic type is threatened by amalgamation with the dark brachycephalic and inferior races.

ARSENIC POISONING THROUGH THE MATERNAL MILK.

DR. BROUARDEL, Professor of Medical Jurisprudence at the Paris Faculty of Medicine, was lately consulted by the Tribunal Court on the question as to whether an infant of twelve months could have been poisoned by the milk of its mother in the case where the latter had absorbed arsenic. The following account of the circumstances which cause this inquiry is given by the Paris Correspondent of the *Lancet*. A man, having been accused of forgery with the intention of appropriating to himself the fortune of his wife and that of his mother-in-law, was at the same time suspected of trying to poison his wife, and having thus caused the death of his child, which the mother was suckling at that time. The child died with symptoms of cholerine a few days after the mother had herself presented analogous symptoms, such as diarrhœa, vomiting, etc. As it was during the hot season, these accidents did not excite attention. It was only after the the second choleriform attack, which occurred in November last, at the same time in the mother and grandmother of the child, that the husband was suspected. On the other hand, the wife declared that she had found in her husband's pocket, a white powder which was nothing else than arsenious acid. To resolve the question, Dr. Brouardel caused the coffin containing the body of the child, which had been buried about six months, to be brought to Paris. This body was completely transformed into cadaveric fat, and it was impossible to isolate the viscera from the other parts, so that it was submitted to analysis in its entirety. It weighed about two and a half kilogrammes, and contained five milligrammes of arsenic which did not proceed from the linen enveloping the corpse, or from the earth surrounding the coffin. It was necessary, in the second place, to know whether arsenic was eliminated by the milk. M. Gabriel Pouchet, an eminent biologist, had performed certain experiments in this direction, which was very conclusive. He caused a certain number of wet nurses, who were patients at the St. Louis Hospital, who were affected with skin diseases, to take a certain quantity of Fowler's solution (from two to twelve drops per day), and he was able to ascertain that under these conditions the milk of these nurses always contained a relatively considerable quantity of arsenic; thus the milk of one nurse who took in six days eight milligrammes of arsenic containing one milligramme of that substance to 100 grammes of milk. It must be added that with these doses the nurses and their infants do not appear to be affected by any accidents. But this does not prove that this would have been the case if the arsenic had been given at once in a single dose. In order to clear up this last point, recourse was had to experiments on female animals. This last series of experiments did not give conclusive results, because the animals presented a very variable susceptibility to arsenic, and the experimenter found it impossible to come to any conclusion concerning these experiments as compared with those performed on human beings. It is, however, evident, from these researches, that the lactic secretion is a means of elimination by predilection for arsenic, and that it is prudent not to administer this agent to suckling mothers. In the particular case under notice, in responding to the Juge d'Instruction, Dr. Brouardel stated that the body of the infant contained a suffcient quantity of arsenic to cause the death of a child of one year, and that this arsenic may possibly have had for vehicle the milk of the mother. This qualified conclusion did not seem to affect the defence or the accusation, and the husband was condemned to twenty years' hard labor.

Correspondence.

A REMEDY FOR SICK HEADACHE.

MILFORD, MASS., July 16, 1888.

MR. EDITOR,— I take for granted that many physicians in active practice would hail with pleasure a remedy that would meet and effectually relieve a majority of the cases of sick headache.

During the past five or six years I have used the following combination with good success.

R	Podophyllin	¼ grain.
	Citrate Caffeine	½ grain.
	Sub-Nitrate Bismuth	3½ grains.

M. One dose to be used when the headache is approaching. Repeat in two hours if needed.

Messrs. John Wyeth & Bro., of Philadelphia made compressed pills for me from this formula (making the pills half weight), of whom any physician can get a supply by ordering.

This combination has served me in practice so well that I desire to give others the benefit of it. Yours truly

JEROME WILMARTH, M.D.

— *Fliegende Blätter* has a comment on the so-called "Study of Objects" which is not without its application in the medical profession. *Professor:* "How many legs have insects?"— *Candidate:* "65 per cent. of insects have no legs at all, 11 per cent. have one, 14 per cent. two or three, 10 per cent. four or five, but none six."— *Professor:* "How in the world did you get this answer?"— *Candidate:* "By carefully examining the collection belonging to the University."

REPORTED MORTALITY FOR THE WEEK ENDING JULY 7, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	905	338	42.35	10.34	30.02	4.29	2.20
Philadelphia	1,016,758	423	189	25.68	9.84	18.72	1.68	.72
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	273	159	27.72	8.28	17.64	3.64	1.08
St. Louis	449,160	243	106	28.70	6.56	20.91	2.87	.82
Baltimore	437,155	241	161	46.20	5.88	42.42	—	.42
Boston	407,024	164	50	10.98	13.42	4.88	3.66	—
Cincinnati	325,000	140	—	21.30	9.23	16.33	.71	—
New Orleans	248,000	140	60	29.11	12.07	12.78	4.97	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	128	77	35.10	9.36	31.60	1.56	1.56
Pittsburgh	210,000	109	74	31.28	5.56	26.68	—	.92
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	20	10	45.00	20.00	30.00	—	—
Charleston	60,145	53	22	24.57	7.56	15.12	1.89	1.89
Portland	40,000	14	4	—	35.70	—	—	—
Worcester	76,328	24	8	16.66	20.80	8.33	—	4.16
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	18	7	11.11	22.22	—	5.55	5.55
Fall River	61,203	37	21	29.72	5.40	27.02	2.70	—
Lynn	51,467	12	0	33.33	33.33	—	8.33	—
Lawrence	40,175	18	8	27.77	11.11	5.55	—	5.55
Springfield	39,952	9	1	33.33	—	11.11	—	—
New Bedford	36,298	10	5	—	30.00	—	—	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	18	12	33.33	—	22.22	5.55	5.55
Salem	28,781	11	5	—	9.09	—	—	—
Chelsea	27,552	8	0	—	12.50	—	—	—
Haverhill	24,979	7	2	—	—	—	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	2	0	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	—	—	—	—	—	—	—
Malden	18,932	1	0	—	—	—	—	—
Fitchburg	17,534	1	0	—	—	—	—	—
Waltham	16,651	2	0	—	—	—	—	—
Newburyport	13,839	1	0	—	—	—	—	—
Northampton	13,419	—	—					

Deaths reported 3,022: under five years of age 1,519; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 964, consumption 298, acute lung diseases 137, diarrhœal diseases 711, diphtheria and croup 84, measles 27, scarlet fever 34, whooping-cough 32, typhoid fever 28, cerebro-spinal meningitis 19, malarial fever 15, small-pox five, puerperal fever three. From scarlet fever New York 23, Philadelphia four, Chicago two, St. Louis, Boston, Cincinnati, Pittsburgh and Lawrence one each. From whooping-cough, New York eight, New Orleans seven, Chicago and Baltimore four each, Philadelphia, Boston and Charleston two each, St. Louis, Washington and Haverhill one each. From typhoid fever, Philadelphia nine, Chicago six, New York four, Cincinnati and New Orleans two each, St. Louis, Baltimore, Pittsburgh and Lawrence one each. From cerebro-spinal meningitis, New York four, Baltimore three, Chicago, St. Louis and Cincinnati two each, Pittsburgh, Nashville, Worcester and Lynn one each. From malarial fever, New Orleans six, St. Louis five, New York two, Philadelphia one. From small-pox, Philadelphia three, New York and Nashville one each. From puerperal fever, Boston, New Orleans and Pittsburgh one each.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending June 23d, the death-rate was 15.5. Deaths reported 2,794: infants under one year of age 636; acute diseases of the respiratory organs (London) 184; whooping-cough 80, diarrhœal diseases 48, fevers 33, diphtheria 29, measles 25, scarlet fever 24, small-pox (Sheffield five, Preston two, Manchester and Leeds one each), 9.

The death-rates ranged from 9.9 in Nottingham to 24.3 in Preston: Birmingham 14.3; Bradford 12.5; Halifax 10.3; Hull 15.0; Leeds 15.0; Leicester 17.8; Liverpool 16.0; London 14.5; Manchester 22.5; Newcastle-on-Tyne 19.7; Oldham 18.1; Sheffield 15.7; Sunderland 16.2.

In Edinburgh 11.9; Glasgow 22.8; Dublin 20.7.

The meteorological record for the week ending July 7, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, July 7, 1888.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	7.00 A. M.	3.00 P. M.	10.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,... 1	29.90	57.0	64.0	51.0	97.0		83.0	90.0	N E.		N.E.	19		12	R.		O.	3	.11
Monday,.. 2	30.15	60.0	63.0	53.0	68.0		68.0	68.0	N.E.		E.	18		1	O.		C.		
Tuesday,.. 3	30.18	68.0	74.0	56.0	57.0		55.0	56.0	W.		S.	6		10	C.		C.		
Wednes,... 4	30.03	72.0	86.0	60.0	58.0		61.0	59.0	S.W.		S.W.	12		16	C.		C.		
Thursday,. 5	29.76	74.0	88.0	63.0	71.0		78.0	73.0	W.		W.	12		2	F.		C.		
Friday,... 6	29.89	74.0	80.0	63.0	52.0		41.0	47.0	N.W.		.W.	20		7	C.		C.		
Saturday,. 7	29.75	76.0	89.0	65.0	55.0		42.0	48.0	W.		N.	18		26	C.		C.		
Mean, the Week.																			

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 7, 1888, TO JULY 13, 1888.

DEWITT, CALVIN, major and surgeon, United States Army. Leave of absence extended one month. S. O. 59, A. G. O., July 11, 1888.

BANISTER, WILLIAM B., lieutenant and assistant surgeon. Leave of absence extended twenty-seven days. S. O. 157, A. G. O., July 9, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JULY 14, 1888.

MARTIN, WM., assistant surgeon. Ordered to Marine Rendezvous, San Francisco, Cal., and to attend officers of the Navy and Marine Corps not otherwise provided with medical aid.

AUZAL, E. W., assistant surgeon. Detached from duty at Marine Rendezvous, San Francisco, Cal., and special duty there and ordered to the Naval Academy.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING JULY 16, 1888.

BAILHACHE, B. H., surgeon. To proceed to Delaware Breakwater Quarantine Station as inspector. July 6, 1888.

FESSENDEN, C. S. D., surgeon. Leave of absence extended thirty days on account of sickness. July 14, 1888.

PURVIANCE, GEORGE, surgeon. To proceed to Chattanooga, Tenn., as inspector. July 6, 1888.

SAWTELLE, H. W., surgeon. Granted leave of absence for twenty-three days. July 9, 1888.

MCINTOSH, W. P., assistant surgeon. To proceed to Galveston, Texas, for temporary duty. July 14, 1888.

PETTUS, W. J., assistant surgeon. Granted leave of absence for thirty days. July 16, 1888.

OBITUARY. DR. J. MILNER FOTHERGILL.

Dr. J. Milner Fothergill, the well-known English author of numerous and popular medical works, died suddenly the latter part of June. He was born on April 11, 1841, at Moreland, in Westmoreland. At an early age he was apprenticed to his father, who was also a medical man. He qualified in 1865 at Edinburgh, and for a while practised in his native village. Some years later he took the post of senior resident medical officer of the Leeds Public Dispensary. It was at about that time that he wrote his well-known essay upon "Digitalis, its Mode of Action and its Use," which gained for him the Hastings Gold Medal of the British Medical Association in 1870 He subsequently spent some time in Vienna and Berlin, studying his profession, and it was at the latter place that he wrote his work which passed into a second edition in 1879, "The Heart and its Diseases, with their Treatment, including the Gouty Heart." On his return to England in 1872, he took the membership of the Royal College of Physicians of London and settled down as a consultant. Sometime later he was elected junior physician to the West London Hospital, a post he resigned in 1881. In 1875 he was elected on the Staff of the City of London Hospital for Diseases of the Chest, at Victoria Park, a post he retained up to the last. In 1876 he brought out his best-known work, the "Practitioner's Hand-book of Treatment," a second edition of which was called for in 1880. After this date he carried out some original researches on the antagonism of drugs which paved the way to the employment of atropin as a remedy in cases of opium poisoning. His essay on the result of his observations gained for him the Fothergillian Gold Medal of the Medical Society. He was also elected an Associate Fellow of the College of Physicians of Philadelphia in 1879, and later, was made an honorary M.D. of Rush College, Chicago. More recently he wrote a very entertaining and instructive work on "Vaso-Renal Change *versus* Bright's Disease."

An English contemporary, from which we have derived the above facts, says of him: "The deceased was at all periods of his life an indefatigable worker. He was, at the same time, a practical physician and an accomplished *littérateur*. Bluff in his manners, his taste for sarcasm sometimes offended those who did not know him well enough to recognize the hearty good-nature that underlay the rough outside envelope. He was hospitable to a degree, and visitors from across the Atlantic knew no greater treat than to pass an evening with him enjoying the brilliancy of his conversational powers and the frank laughter with which he greeted the witticisms of others. His books were characterized by the same sound common-sense and *bonhomie* as his observations, and were unusually light reading for technical works. He was at least as much appreciated in America as at home, and his articles and books always commanded a favorable reception. Probably his last 'outing' was his trip to Bournemouth on the occasion of the opening of the new piece of railway. He was then far from well, but managed to make a very telling speech at the luncheon. Dr. Fothergill was a martyr to gout, and was enabled to treat of it *en connaissance de cause*. His burly figure will be missed by a large circle of friends both inside and outside the profession."

OBITUARY. DR. A. Y. P. GARNETT.

Dr. A. Y. P. Garnett, of Washington, D. C., dropped suddenly dead at Rehoboth Beach, Del., on Wednesday the 11th inst., in the sixty-eighth year of his age. He was born in Essex County, Va., and was graduated from the University of Pennsylvania, Department of Medicine, in 1841, in which year he was appointed an assistant surgeon in the United States Navy, in which he served until 1848, when he settled in Washington. At the outbreak of the civil war he entered the Southern army as surgeon, returning to Washington at the close of the war, where, having been the physician of the late W. W. Corcoran, he acquired a large practice, especially among the Southern residents of that city. His marked Southern sympathies are shown by a recent remark made not altogether in jest, that the only two unreconstructed rebels now left in the country were Jefferson Davis and himself. From 1856–61 and 1866–70 he was professor of clinical medicine in the National Medical College of Washington. In 1870 he was appointed emeritus professor, which position he held at the time of his death. He took an active part in organizing the Ninth International Medical Congress, and was elected president of the American Medical Association in 1887.

BOOKS AND PAMPHLETS RECEIVED.

The National Formulary of Unofficial Preparations. First issue. By authority of the American Pharmaceutical Association. 1888.

Lecture.

INQUIRY INTO THE INFLUENCE OF THE TEMPERATURE OF THE AIR ON THE DEATH OF INFANTS FROM DIARRHŒAL DISEASES.[1]

BY DR. MEINERT, OF DRESDEN.

GENTLEMEN: It is a universally acknowledged fact proved by statistics, that the mortality of infants is chiefly due to diseases of the intestinal canal, and it is also universally acknowledged that the increase of mortality of infants owing to diarrhœa is connected with the elevation of the temperature during the summer months.

It is known, that epidemic summer diarrhœa of infancy appears only in those places where, in the summer months, the average temperature by day rises above 16° C. (59° F.), that large cities chiefly suffer from it, that infants at the breast of mother or wet-nurse are less subject to it than those fed artificially. A certain uniform correspondence between the temperature of the air and mortality from diarrhœal diseases has been observed in certain places. There is no lack of hypotheses as to the origin of the summer diarrhœa of infants, but there are no personal observations which can enlighten us as to the real nature of this disease, which has increased to such an extraordinary degree.

Statistics, which have often proved successful in deciding medical problems, are no guide in these cases. The causes of death assigned in the public records, during the summer months, in referring to children under one year of age, are most unreliable; for not only is a medical certificate utterly wanting in the majority of cases; but even when such a certificate exists, there is a want of unanimity as to the name of the disease.

One special cause of the prevailing confusion, is the universal application of the term "convulsions," which we find most frequently in official reports, not only to such cases as were without medical assistance, but to those numerous cases where diarrhœa of infancy was complicated with convulsions.

The diagram laid before you, which gives a clear idea of the cause of death among infants in Dresden during the different months of the years beginning in 1881, shows how the increase of deaths in the height of summer, is every year attributable to the great frequency of convulsions and diarrhœa.

If we now undertake to examine etiologically the influence of certain causes on the disease, we shall be compelled not only in cases of death from diarrhœa (cholera infantum, cholera morbus), but also in cases of supposed "convulsions," to inquire exactly into the character of the disease in question. This is only possible by direct inquiry in the families where such deaths have taken place.

According to the data I have been able to procure from the Registration Reports concerning single cases of death in Dresden during a period of eleven weeks, July 11, to September 25, 1886, in 796 cases of infant mortality (under one year of age), 281 were attributed to convulsions, and 382 to diarrhœal diseases under various names. Of these 663 cases 59% were testified by a physician. In 90½% of the cases the efforts to determine the causes of death were successful mainly owing to the cöoperation of my colleagues Drs. Hecker, Schottinir and Gilbert, and almost all the medical men under whose treatment the deceased children had been, encouraged me by their permission to anamnestic researches.

Further research proves that 36 cases of *genuine convulsions*, and 580 of *diarrhœal diseases*, had occurred. Five hundred and nineteen papers, each containing 30 questions were returned to me, with the chief points well filled, the object being by this means to make a definite statement as to the clinical features. The diarrhœa was sometimes unaccompanied by *vomiting*, very frequently with convulsions; of these latter it was, of course, only possible to obtain exact information concerning those of the clonic form, about 20% of the cases. We counted 35 cases of *chronic (gastro) intestinal catarrh*, and 444 of *acute diarrhœa* (cholera infantum); of the children carried off by these diseases, 71% had till then preserved healthy digestive organs, and 54% were healthy in every respect.

On this chart I have noted each case with its number; in the lower diagram, the day the illness commenced, in the upper, the day of its fatal termination. Homonymous numbers (those referring to the same case) are joined by a line, so that the duration of each separate illness can be easily observed. The curved lines over the diagrams gives the mean daily temperature in the open air, the height of the barometer, and the average relative humidity of the air, above these are noted the velocity and direction of the wind, the rainfall and thunderstorms.

You see, gentlemen, to what extent a rise of temperature augments the number of cases of sickness as well as the number of deaths. *Pressure and humidity of the atmosphere, rainfall* and the *direction of the winds*, have less power to disturb the parallelism between increased illness and the temperature of the air, than has been hitherto supposed; and the *velocity of the wind* modifies it to a great extent.

A higher degree of temperature combined with high wind, is not dangerous, but moderate temperature without wind, produces a considerable increase of sickness and death. Most of these cases occur on hot days with little wind, and most cases of sickness are found together with these unfavorable conditions of the weather, or they follow immediately upon it. There are days, when the numerous cases of death coincide with the most unfavorable condition of the weather, but often they follow also with longer intervals (of a week or so). This circumstance is described by the lines representing the illness. In the average, the infants died 7½ days after the day on which they were taken ill with diarrhœa; 26 under 24 hours of sickness, 49 on the second day, 54 on the the third day of illness. Of 444 infants, only 27 lived longer than a fortnight from the time of being taken ill.

The greater the heat, and the stiller the wind, the quicker the development of the sickness, and its fatal termination will be.

You will see that the vertical lines which denote the cases, which terminated fatally the same day the illness commenced, occur only in the hottest and most sultry days.

If the weather is the same at the end as it was in the beginning of the eleven weeks, the mortality is, notwithstanding different; namely, lower in the beginning, and higher at the end. This is to be explained partly by the larger amount of accumulated heat,

[1] Lecture delivered in the Hygienic Section, at the sixtieth meeting of German naturalists and physicians.

stored up in the walls of the houses during the height of the summer, and partly by the greater number of sick children, which increased from week to week — as my diagram shows. The 3d, 14th and 16th of September, were the days on which the greatest number of deaths from diarrhœa occurred during the whole course of the epidemic (19, 18 and 21 cases); these however, include cases of illness which occurred during the previous weeks. I refer to those infants of whom, as our anamnestic researches show, one part were already on the way to recovery, and probably would have recovered, if the intense heat of July, which produced diarrhœa had not returned in September.

The results of the census of December 1, 1885, enabled me to make inquiries into the conditions under which the infants in Dresden died of diarrhœa during the eleven weeks recorded.

Among 246,088 inhabitants of Dresden, (including the military establishments) there were 5,893 (23.88%) children, less than twelve months old, according to the census of December 1, 1885; of this number (not including doubtful cases) 580 died of diarrhœa (cholera infantum), with or without convulsions, between the 11th of July, and the 25th of September, that is to say, of the girls 9.18%; of the boys 10.15% (about the same percentage of both sexes, as in the other months of the year). Of these children, 15.7% were illegitimate; 60.8% belonged to the working classes, 23% to the middle classes, ½% to the higher, and more educated classes. In Dresden, 10.22% of the children living on the right bank of the Elbe died, while on the left bank (notwithstanding that the mean temperature was 2.13%C. [17.46° F.] higher during the weeks recorded than on the right bank) only 9.59% died. In the eleven districts, the percentage of deaths fluctuated between 4.6% and 13% among infants under twelve months old; the relative number of infants was not always in proportion to these deaths; there were districts, with a considerable population of children, where there were many deaths, and again other districts, containing the same population, where comparatively few deaths occurred. Illegitimate infants, among whom the mortality is greater in Dresden as well as in most other places (judging by the year's record) were attacked by fatal diarrhœa less than legitimate children. The percentage of deaths at different times during the first year of infancy, and the number of deaths from gastro-intestinal diseases, differed in the cooler seasons from that in the hot summer-months. There is also a difference in the number of deaths in the various stories of the houses.

All these peculiarities, paradoxical as they appear at first, were confirmed by the observations renewed in the four abnormally hot weeks in 1887. (We speak of the deaths occurring in Dresden on the left bank of the Elbe, among children in their first and second years.) But in 1887 (in 141 cases), the average duration of the illness was shorter (three and one-half days), the number of the rapid cases larger, (for instance, death taking place on the first day in 14% of all cases, against 6% the preceding year). In the middle classes the average number (32%) was larger; among the working classes far less than in the year 1886 (only 53.19%). For 1887 the cases complicated by convulsions were far more frequent.

The direction in which I had to continue my investigations was thus clearly indicated. First of all the *dwellings* in which deaths had occurred, had to be examined.

I found that *generally deaths by summer diarrhœa occurred only in those dwellings in which, by the influence of a high atmospheric temperature, a still higher temperature indoors had developed*, in consequence of insufficient natural ventilation. I observed that deaths occurred more frequently in dwellings exposed to the heat of the sun to which winds had scarcely any access. The greatest relative number of deaths occurred in the parterres and first floors. (These were exposed not merely to the direct heat of the sun, but also to the heat produced by the reflection of the rays of the sun from the soil.) In the underground dwellings (souterrains) which are very little exposed to the rays of the sun, there was the smallest number of deaths.

Compared with the total number of children under one year of age, living the first of December, 1885, in each of the various stories of dwellings, there died of diarrhœa during the weeks above mentioned:

	1886 (580 cases).	1887 (134 cases).
Underground	3.98 per cent.	2.44 per cent.
Ground Floor	12.78 "	4.48 "
First Floor	10.70 "	3.03 "
Second Floor	9.13 "	2.36 "
Third Floor	8.18 "	2.70 "
Fourth Floor	9.18 "	3.69 "
Fifth Floor	11.27 "	1.61 "

To gain an exact insight into the influence of dwellings on the diarrhœal diseases of infants, the first floors where deaths had occurred in 1886, were examined. The dwellings on the first floor, being inhabited by the better classes, where poverty could have no influence, were the most suitable for the purpose.

The temperature of these dwellings, which were examined in July and August, 1887 (one meter from the floor), was found higher than the outside temperature in the shade by 3.60° C., (29.52° F.), to 14.40° C., (56.64° F.), on an average of 8.59° C., (42.95° F.). Evidently great obstacles existed which prevented the proper entrance of atmospheric air to these dwellings.

Only one child died in a detached house, the other houses where deaths occurred were in broken rows or surrounded by buildings. It was only in ten houses that it was possible to have a thorough draught from one side to the other. The fact of living in close proximity proved to be of importance only in those cases where there was a lack of ventilation. In the dwellings of the first floor, where deaths occurred, we found on an average, in the bed-rooms 12.72 cubic meters of air for each person. In the houses of the Johann Meyer-Strasse, which have been built for workmen by the City Board, and which escaped the disease, a child has, on an average, to be satisfied with 4.57 cubic meters of air in the bed-rooms. But these houses are not enclosed by other buildings, and the rooms can be exposed to strong, beneficial currents of air.

In that part of Antonstadt which consists chiefly of villas, only three deaths occurred, although there are 11 streets and 2,921 inhabitants, among them being fifty children under a year of age. These deaths occurred only in one house (Schillerstrasse 63), a house which by its wings and backbuildings forming narrow courts, is the most unhealthy of all the dwellings in that quarter.

In dwellings of equal cubic measurement — *ceteris paribus* — there were the greatest number of deaths

in those with low rooms. (Rooms with higher ceilings allow better ventilation through the walls.) In the dwellings where deaths occurred, the rooms on the first floors were 2.78 meters high, against a height of 3.23 meters in the workmen's houses before mentioned.

Gentlemen, the plan of the city which I here lay before you shows by different colors the average proportion of deaths in each single street (compared to the total number of infants under twelve months who were living on these streets). You will never find proportions which cannot be explained by the condition of the dwellings and the density of the population.

Sometimes I doubted whether the relations I found existed in every case. But I found again that the observed dependence existed everywhere. The great mortality, for instance (15.78%), in Schillerstrasse, which is a superior part of the town and like a garden, was solely due to the three cases in the house No. 63. In the Oppel-Suburb you see three streets close together, in which the deaths differ greatly in number. In Hechtstrasse there were 18.49%, in Kieternstrasse 2.50%, in Johann Meyer-Strasse 0.00%, although the population of all these three streets consists of the same class of workmen. But Hechtstrasse is built on very low ground in close terraces with lateral and back-buildings; the Kieternstrasse lies high with semi-detached houses, and in Johann Meyer-Strasse (although the drainage is indifferent), we find only detached houses of the working classes, consequently surrounded on all sides by the open air.

The next question was, whether among the whole number of children, living in unhealthy houses, we could discover a reason for individual causes, which might explain the fact that one portion of the community should be attacked by fatal diarrhœa while the rest escaped.

Physicians are accustomed in such researches to make a distinction between legitimate and illegitimate children, and they are right, because by the unfavorable conditions of their nourishment illegitimate children are more likely to be subject to affections of the stomach and intestines.

It is a remarkable fact that, as I have mentioned before, in the year 1886, *during the eleven weeks*, beginning July 11th, a relatively smaller number of illegitimate children died than legitimate (namely, 6.82% illegitimate out of 1,334 living illegitimates, and 8.82% out of 5,534 living legitimates), against 21% deaths of illegitimate and 16% of legitimate children *in the whole year*. This may have been mere chance; but, as the reports proved, the case was the same in the year 1887. If we go back ten years and compare the relative proportions of the third quarter of every year with the other quarters, we find, as you may learn by this diagram, that this strange fact was not observed until the year 1883, and then somewhat suddenly. At that time people began to take more interest in the matter than had been the case formerly. Up to that period illegitimate children had been under the control of the government police. According to an order issued by the Saxon parliament the town was now charged with the inspection of these children, and this duty is since then performed in the best manner possible. Only such women are permitted to take charge of illegitimate children (and then only of two at a time), whose dwellings have been declared by the inspector of the local Board of Health to be healthy. By this reason we recognize the cause of lower mortality among illegitimate children; it is the more favorable condition of dwellings which in Dresden are selected for illegitimate children, whilst legitimate children of workmen are condemned to live in the worst imaginable dwellings.

The greatest contrast, however, consists between children fed in a natural manner and such as are brought up artificially; this has been observed whereever unusual mortality from summer diarrhœa prevails.

There were in Dresden, out of 479 children in 1886, mentioned above, only 19 nursed at the breast, none of them more than three months old. In 1887, of 123 children, of our report, nursed at the breast only 5, and not one more than four months old. The only nourishment, or at least the principal food, of almost all the other children had been cow's milk. (According to researches made *ad hoc* — among some hundreds of families of workmen, in reference to their children of one, two, three, four, five, etc., months, 65.07, 60.26, 49.78, 38.94, 35.75, etc. per cent. were nursed by their mothers.)

The fact of the existence of a noxious influence which explains the dangerous condition of certain dwellings, as well as the little chance to escape for children brought up by hand, is a fact of the highest importance for the etiology of cholera infantum. Hitherto, there has been a lack of authentic criterions for the different hypothetic arguments which treat of the origin of our disease.

Why do infants at the breast have an advantage even in the most unhealthy dwellings, and why do children brought up by hand very seldom die of the summer diarrhœa, in favorable dwellings, although at other times disposed to it to so great a degree?

If I were to indicate the noxious qualities, which give a special characteristic to the dwellings in which the infant died, I should say, there was partly an impure air by the exhalation from human beings. However, too great a stress must not be laid on this, because similar conditions and circumstances are found in winter without producing the characteristic summer disease.

Far more important appears to me the consideration that the *climate in the dwellings* where the children died, even when the temperature was moderate, was, by an exceedingly low measure of ventilation, *such as to hinder the functions regulating the heat of the body.*

Flügge, in his valuable researches on "Das Wohnungsklima fur Zeit des Hochsommers"[2] has already drawn attention to this danger.

If all the remedies are at hand which the regulation of heat affords at the time of its greatest requirements, no very serious danger for the balance of heat is threatened by the sun of our latitudes, not even in the worst conjunctures which are possible in our dwellings. The most important of these remedies is the *increased consumption of water*. This consumption of water by the *infant at the mother's breast* is regulated in the most practical manner possible, by an increased consumption of water by its nurse. (I have made this self-regulation the object of a special series of examinations.) But it is different with an *infant brought up by hand*. In hot weather it will drink — if the intelligence of the mother does not put a stop to it — in-

[2] Beiträge für Hygiene. Leipzig, 1879.

creasing quantities of milk, and as the milk is of the same concentration as usual, the infant takes an *excess of substantial food.*

By this the *production of heat of the body will be increased*, instead of, as is the case with an infant at the breast — of being diminished in the warm season.

This happens the sooner, as the digestive organs of the infants are the more normal. (Indeed there were among those 444 children, mentioned in the first part of my lecture, that died from summer complaint 71 per cent. with previously healthy digestive organs.) Other children will catch dyspepsia by an over-filling of the stomach, and will then take in less water than the high temperature of the summer requires.

In the one case as well as in the other, there is an *increase of the temperature of the body* under certain external conditions preventing the discharge of heat of the body.

As a matter of fact thermometrical observations which we made on the months of July and August, 1887, in presumably unfavorable dwellings, on a great number of infants, proved that a feverish increase of temperature of the body very frequently occurred.

Here in my chart you see some curves referring to infants whose temperature was taken (*in ano*) three times daily for weeks together. By these curves you can recognize the increase and decrease of temperature out of doors, and that of the essentially higher temperature in the dwellings. Two of the graphic charts are especially interesting. In both cases, the indoor temperature of the air increasing rapidly after a prodromical fever of a few days, together with a temperature (*in ano*) of 38.8° C (102.84° F.) *a typical cholera infantum sets in*, complicated in the one case by convulsions and ending with death.

Gentlemen, we have now arrived at the point where, according to my opinion, the problem lies.

Is the prodromal fever of the children's sickness only produced by *accumulation of heat* of the body, and in this case, what is the relation between this fever and the typical affections of the digestive organs? or have we, from the very beginning, to deal with the invasive fever of a *zymotic disease*, the producer of which is only developed, when just these dangers of dwellings and foods are united, which we recognized as the genetic conditions for producing cholera infantum?

My modest contributions in solving these questions range naturally with my clinical statements in the cases referred by me. But this appears to me to belong less to the province of the hygienic section of this Congress and therefore I intend to conclude my report on this subject in the section for diseases of children.[3]

The influence of the above mentioned conditions of dwellings in the hottest days of summer shows itself by the *different degrees of danger for the different ages of the children.*[4] The highest mortality prevailed among the children under six months. Their greater danger is partly explained by the special nature of their digestive organs which disagree with artificial food; partly by the perspiration which is so very important to the regulation of heat and which is only developed after the first three months of life; partly by the bad habit,—customary in Saxony— of keeping children of this age under thick covers even in the greatest heat, thus forcibly preventing the movements of the limbs by tight clothes. From the sixth month the mortality decreases rapidly so as almost to disappear in the second year, when children acquire the most important faculties of free movement and of speech, as a preventive against suffering from excessive heat.

Now, gentlemen, I request you to glance at my graphic chart, which shows the monthly rate of mortality amongst children in the larger towns of the European continent and the United States of North America (the percentage being taken from 100 infants born alive), as far as serviceable reports were at my disposal. You see, in looking at the map of Europe, how the mortality of infants in the summer months constantly decreases towards the south from Berlin to Rome, in spite of the increasing temperature towards the south. Without doubt one chief cause is, that towards the south of Europe you find more mothers suckling their infants. The houses which in our own country are more adapted to shelter us from the inclemency of a cold climate, as well as the treatment of children, are in the South in better accordance with the requirement of a warm climate.

I hope, gentlemen, soon to be able to supply the omissions you will have noticed in my statement of to-day, by a complete publication of my material and my researches. Until then, I will permit myself to postpone my thanks to those colleagues and officials in government and municipal service by whose kind coöperation I have been enabled to work thus far.

[3] See short report in Jahrbuch für Kinderheilkunde, N. F. xxvii, 3.

[4] Compared with the total number of children living July 1, 1886, in the 1st, 2d, 3d, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th months of their age, the percentage of deaths from diarrhœal diseases was 14.40, 13.10, 13.07, 12.41, 12.42, 8,63, 6.06, 6.09, 4.05, 3.52, 3.32, 4.12.

Original Articles.

INVETERATE HEADACHE, WITH CASES.[1]

BY HAMILTON OSGOOD, M.D.

To write upon persistent and oft-recurring headache, is nearly as discouraging as the attempt to overcome it by treatment. It is an affection which either yields to no remedy whatever, or, if it be relieved, is sure to return as soon as the effect of the panacea has disappeared. If not of this inveterate character it is very frequent, is intractable while it lasts, and so capricious, that although it may yield to a given method of relief upon one occasion, upon another the treatment is not of the slightest avail. This discourages the patient and annoys the physician. If the latter be a routinist he is embarrassed. He plies his anti-neuralgics. They achieve little or nothing. Sometimes he feels encouraged; generally he is baffled. Strange as it may seem he makes no effort to discover a hidden cause for the pain. To him headache means neuralgia, and the remedies he applies are simply those which report says are efficient in such cases.

Occasionally, among wiser and more thoughtful physicians, there is a degree of indifference, a careless resort to a well-thumbed prescription which generally fails. The case is uninteresting. It presents no stimulus to the physician's mind. In short, he neglects the patient and wins what he may deserve, but which is not true of him, a reputation for ignorance.

The common, the non-perilous ailments of our pa-

[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, May 9, 1888.

tients are apt to be superficially treated. Headache is a plague to an indolent medical man. He regards it as of little moment, and treats it accordingly. To the patient, however, the ailment is a serious matter, depriving him as it does of power in practical life, of enjoyment of vacation, of comfort at home. It entails annoyance to others, for it renders the sufferer irritable, unjust and uncompanionable. If he be not relieved when he might be, the physician naturally deserves blame for an evil of wide extent.

In the nerve-tissue concerned in the form of pain in question, there seems to be almost intelligence and reasoning power. Unfortunately, this is shown by the incessant endeavor of this tissue to reassert itself. Pathologically sensitive nerves seem never to forget their capability of creating suffering. One might say they were ever on the alert for lack of vigilance on the part of the patient; that they constantly lurk for opportunity, for, no sooner are they quieted by the physician's skill than they start up armed with new vigor in their diabolical ability to torture humanity. Their arts are hydra-headed and woe betide the object of their wiles if he for a moment relax his self-defence. He may forget but they never do; on the contrary, the more careless he, the more active and energetic are they.

It is no wonder then that chronic headache is indifferently treated by so many physicians. The very persistence of the pain too often destroys the interest of the medical attendant.

Inveterate headache may be relieved by one or more of the scores of internal and external remedies, but these merely wither the fruit without touching the root of the evil. Indeed, the management of this affection is so empirical that it recalls Voltaire's reflection upon the practice of medicine, which he said consisted in: "Putting medicines, of which we know little, into a body of which we know nothing." No sooner does a form of treatment promise success in a patient, whose look and daily history indicate that at last the headaches have yielded, when like a thunderclap, a new series of attack appears, and the course adopted and heretofore efficient, becomes inert.

As an illustration: A lady, single, aged fifty-five, has suffered from intense headache since her youth. She has had every variety of treatment; has consulted many physicians. Remedies which on one occasion relieved her failed utterly on another. Change of climate was extremely beneficial during one year. On returning to the same locality the following year her headache was incessant. She is known among her friends as a victim of pain and has had every reason to feel profound discouragement. My first professional interview with her was during an attack of headache, in which, as is usual with her at such times, she seemed nearly unconscious from suffering. I was merely asked to relieve her by a subcutaneous injection of morphia, which I did, using one-half grain. Subsequently, I was requested to take charge of the case. A careful examination gave me the following information: The patient was well-nourished; appetite generally good; bowels in normal condition; her face showed the exhaustion caused by chronic pain; the menstrual periods (now passed) had always been regular, and, save that a headache was apt to follow them, free from annoyance of any nature. Her headache occasionally extended to the left side of the cranium, but was almost wholly confined to the right side and never took the form of clavus. The onset of pain, however, was not peculiar to the menstrual epoch, but occurred irregularly at other times, and so frequently that the patient was never sure of being able to keep any engagement whatever. "Pain is the prayer of the nerve for healthy blood," says Romberg.[2] During the thirty years of her experience of pain, this lady has taken every sort of tonic and every variety of blood-making food. The wise adage, "Eat when you are hungry but not so long as you are hungry," has been carefully observed, as have also the ordinary laws of health.

Sudden changes of weather have always given her great discomfort. This may be explained by Wright's[3] computation to the effect that a change of one inch in the barometer increases or decreases the atmospheric weight which the body of an average man sustains—by 1,080 pounds. "The results in periods of great weather fluctuations are headaches and even apoplexy." In my patient it is easy to imagine the painful effect of the abrupt oscillations in the circulation, which would occur under such conditions.

The headaches I found to be invariably preceded by flushing of the right ear, the color deepening, as the pain appeared, to a livid hue. A little later the left ear became flushed but never took on the darker color of the right.

This anomaly in the circulation led me to examine the heart. I found it free from organic lesion, but the first sound was weaker than the second, and both sounds as well as the character of the heart's impulse indicated lack of power in the cardiac muscle. This explained the temperature of the hands, which were invariably cold, and caused me to suspect that the lividity of the right ear during an attack of pain and the deeper co-existing color of the right face, as compared with that of the left, were due to weak heart and habitual lack of vaso-motor energy in the bloodvessels of the right side of the head. This, I argued, was a logical accompaniment of the persistence of pain in this side, and probably showed a chronic dilatation, or at any rate weakness in the walls, of the vessels of the right side, and which became apparent whenever the irritation of pain reflexively lessened the energy of the heart. During an attack, I further argued, these vessels probably dilated and since "vessels of the brain are not supported by pressure of surrounding elastic muscles, and have, moreover, a less powerful construction, than have bloodvessels elsewhere,"[4] this temporary dilatation of weakened vessels created a local obstacle to the onward flow of the blood, and hence the increasing deeper hue of the visible tissues of this as compared with the left side of the head and face.

The stagnation of the blood-current is naturally followed by an accumulation of carbonic acid, and in consequence by an exacerbation of pain. A good illustration of this local condition of the circulation may be seen in the purple outlines of the blood-vessels of a drunkard's nose. Here the vaso-motor energy is permanently deadened by alcohol, and we see the constant presence of carbonic acid. In the patient in question, however, the local impurity of blood disappears so soon as the pain and its reflex effects upon the heart cease.

[2] Nerven Krankheiten.
[3] On Headache.
[4] Wright on Headache.

In behalf of my theory allow me to digress for a moment in order to relate the most striking instance of neurotic reflex which has ever come to my notice. Some years ago I was called to a lady who was suffering from severe pain in the right ear. I had frequently relieved this ear of large masses of wax, and the patient rightly suspecting the cause of the pain, had vainly tried to clear the ear in the usual way. When I reached her house the lady told me she was also in great discomfort from a delayed menstrual period, now eight days overdue. It required fifteen minutes of time and copious injections of warm water to free the patient's ear from a very large mass of cerumen. The relief was immense, and, moreover, before I left the house the *period had appeared.*

It is not strange then that great pain in the head reflexively will lessen the power of the heart, and I feel very confident of the correctness of my argument in the case in question. After writing the foregoing, I happened to find in Anstie's clever book on neuralgia, the following remark: "muscular viscera which are composed of unstriped fibre, like the intestines, or of a mixture of striped and unstriped, like the heart, are probably very liable to a secondary paralytic influence from certain special neuralgias."

Still I was no nearer to a discovery of the original *cause* of the headaches. As to the quality of the pain I may safely repeat Begbie's words in relation to a similar case quoted by Day, in his book on headache: "It was not nervous, nor hysterical; it was not inflammatory, nor congestive; it was not anæmic; it was not dyspeptic; it was not of a rheumatic, nor of neuralgic character; it was not periostitic; it was not periodic." Finally, something in the general look of the patient, nothing positive, there being no especial symptom which could be named, suggested gout. The patient denied all knowledge of any case of this ailment in her family, but a careful inquiry into the family history revealed the fact that in several of her ancestors gout had existed. I at once determined to test this possibility, and took with me a quantity of the patient's urine for examination.

Previously, however, I ordered tincture of strophanthus in doses of four drops which I subsequently increased to eight drops, three times daily. I may say here that even before I adopted any other form of treatment, so soon as the cardiac tonic began to show its effect in a relatively stronger first sound of the heart, the headaches became less intense in character the discoloration of the right ear appeared less frequently, and when it did appear, was far lighter in hue. This was the first proof that the headaches were partially due to weak heart.

In examining the urine, I did not make a quantitative analysis for the uric acid present, but did find the fluid intensely and unusually acid, and that the specific gravity was 1,034. This, in the absence of albumen and sugar, confirmed me in my suspicion of the existence in the patient of a gouty tendency.

[In a lecture upon gout, Trousseau relates a case of headache which puzzled him extremely. This was in the early days of his practice. After a long period of doubt and insufficient treatment, the case was cleared up by a frank onset of gout, in reference to which Trousseau makes the interesting remark. "I did not then know that *gout* and *migraine are sisters.*— *Clinique Médicale*, Vol. III.]

Prescribing the bi-carbonate of soda in scruple doses, three times daily, the urine soon became moderately acid, the specific gravity fell to 1,024 and during the following six months, not only did the headaches become very infrequent but when they appeared the pain, save in two instances, was not acute.

Meanwhile, under alternate use of the tinctures of strophanthus and digitalis, the circulation of my patient had improved to such a degree that the hands and feet became habitually warm, her face lost its expression of exhaustion, her eyes brightened and she looked years younger than when I first saw her. This change corresponded with a steadily increasing power in the first sound of the heart which was now stronger than the second sound. During this interval, I substituted Buffalo lithia water (spring No. 2) for the soda, and the patient became more comfortable than she had been for several years, only two headaches of moment occurring during these six months.

This period of truce was then suddenly interrupted by onset after onset of intense headache, which, however, to my great relief, I soon found had their origin in the suppurating pulp of a molar tooth, so that they did not disturb my diagnosis of gouty headache. The tooth was soon relieved but the cranial pain held on. Antipyrine quieted the headache but caused unbearable nausea.

Just then appeared in *La Semaine Médicale*, Germaine See's recommendation to give with antipyrine, an equal bulk of the bi-carbonate of soda as a certain means of avoiding nausea. This proved a success, and disposed of all tendency to nausea in this case and several other cases. In the patient in question, however, the drug soon became inert. The caffeine, bromo-caffeine, likewise guarana of which caffeine is the active principle, were never of any use to her. Cannabis indica is perfectly negative and the patient is so annoyingly familiar with every other known remedy for headache and the inefficacy of all of these, that in her paroxysms of pain you will not wonder, notwithstanding I have a strong prejudice against the drug, that I have occasionally resorted to morphia, which of course, relieves the pain, yet is invariably followed by severe vomiting. I did not try antifebrin because by this time I had lost faith in remedies of that sort for this patient.

When she came out of this storm I found that the former effectual treatment by cardiac tonics and alkalies had utterly lost its power. This fact together with absence of relief from medicines which benefit other forms of headache, still farther convinced me that gout and not neuralgia was the root of the ailment and I finally resorted to absolutely anti-arthritic treatment — wine of colchicum and iodide of potassium — the diet being carefully regulated. That I did not do so before, in view of my diagnosis, was due to my hope that the cardiac tonic and alkalies would prove effectual, as indeed they decidedly did for six months. Almost at once after beginning to take the remedies for gout the patient experienced a heretofore unknown sense of relief. Time is needed to prove that she has been wholly relieved of her suffering, but she is already in a condition of comfort to which she has long been a stranger, and although at times she is conscious of pain, it is so mild in character she does not consider it of moment and I hope it is due to nothing more than nerve-memory. Twice weekly, I give her a strong secondary galvanic current. This is acting well as a nerve tonic and the

patient is more vigorous in every sense. She is taking eighteen drops of the wine of colchicum root and eight grains of the potash, three times daily.[5]

A prominent feature in the symptoms of this case has been the weak heart; careful stimulation of which contributed largely to the well-being of my patient, during the six months of almost entire freedom from severe pain.

This point merits especial mention. I believe we neglect the heart in many cases in which if this organ were stimulated, patients would sooner reach a condition of comfort. In the patient in question, notwithstanding she has been a victim of pain for thirty years during which she has received such a variety of treatment, that it is difficult to name a remedy with which she is not familiar, and in spite of having passed through the hands of very many physicians, her heart has never before been carefully examined nor directly treated.

The heart being the active agent in the general circulation, distant localities suffer when this organ becomes feeble, in the same sense as would the outlying beds of a garden, the source of whose supply of water we may suppose to be a centrally located pump, if the pump lost power and became unable to give the distant beds their needed supply. In short, the necessity of aiding the heart in every case of chronic headache, is the one point which I would especially emphasize, particularly because I find it universally neglected in the books. Indeed, there are few ailments of any nature, in treating which it would be unwise to aid the heart. But, it is, I believe, too apt to be the case, if the physician find a regular cardiac beat and no murmur, that he pronounces, or deems, the organ in a normal condition, when there may be a lack of cardiac energy as shown by the radial pulse and by the existing relation of the heart-sounds to each other.

It is but recently that I treated a case of chronic hyperæmia and catarrh of the pharynx, with distended veins and hypertrophy of the follicles, in which case I also found a weak heart and a gentle systolic murmur. Until I resorted to cardiac stimulation I made but slow progress in relieving the catarrhal ailment, which, however, decreased rapidly so soon as I began to aid the heart, the condition of which undoubtedly had much to do with the pharyngitis. This suggests a second case of headache of long duration in which the pain was located strictly over the occiput. The anti-neuralgic gamut of remedies, the patient told me, had been used in vain. He was frequently unfitted for his work which was wholly intellectual. His sleep had long been irregular and insufficient. His moods became despondent. He was never free from pain, which, however, varied in degree. This is the brief history of many years.

I found cold hands, injected conjunctivæ, a muddy skin. Examining the heart, though it was free from murmur and pulsated with regularity, its tones and impulse were not sufficiently strong for a well-developed man, and the first sound was decidedly weaker than the second. I at once prescribed the tincture of strophanthus four times daily, the fourth dose being larger than the other three and to be taken at bedtime. Very soon the chronic occipital pain was relieved and up to this time the remedy has been efficient. According to various writers occipital headache is not understood. Nevertheless, it seems to me when cause and effect are as clearly shown and as easily relieved as in the case I have just cited, that we do get some idea of the conditions whose united result is headache. Still, even here, why the pain should confine itself strictly to the occiput, is, I must admit, a *quid ignotum*. I have, however, sometimes questioned whether the sudden and almost right-angled curves in the vertebral arteries just before they unite to form the basilar artery, are not a factor in occipital pain when the heart is weak or tired. At any rate the pain is almost wholly in the zone of these four abrupt turns in the two vertebral arteries.

Could it be vaso-motor pain due to pressure caused in these arteries by the resistance offered to the circulation by the arterial curves, plus the local accumulation of blood due to the weakened *vis a tergo* resulting from a feeble heart? There is much to learn here and I advance these theories with great diffidence. Erb[6] says: "In regard to the etiology of this form of headache but little is known;" and I have at present a case under treatment which is very puzzling.

The patient dates his neuralgia as far back as his student days when he worked incessantly and neglected general care of his health. His daily life is spent in severe brain work. He passes at least eight hours daily in a chemical laboratory, which might lead one to suppose gases and odors to be one element in his headache from which he says he has not once been free for sixteen years. But, inasmuch, as during the long vacation, which is lived largely in the open air in a very high locality, the pain continues without intermittence, the natural inference is that laboratory work has little or no influence in the causation of it. Moreover, the headaches began years before the patient became a chemist.

This seems one of those cases in which, as Erb says, no anatomical cause of pain can be shown to exist, and thus far it has defeated me. It need not be said that medicines, electricity, regimen, gymnastics, etc., have been vainly tried. Cannabis indica, antipyrine, antifebrin, galvanism have no effect whatever. I found that friction over the occiput and upper portion of the nape of the neck afforded decided relief. The patient continued the procedure but finally thought that so much movement increased the pain and it was abandoned.

He cannot sleep upon the back without causing intense exacerbation of the pain, and is obliged to use an extremely thin pillow, for, when lying upon his side the slightest bend of the neck aggravates the pain. The increase of pain in the dorsal decubitus and by a bend in the neck is the possible result of retarding the circulation. Temporary relief from friction was the probable consequence of lessening the pressure in subjacent bloodvessels. These are points which seem to support my theory in relation to the outcome of the sudden slowing of the blood-current by the curves in the vertebral arteries.

Cardiac tonics have as yet produced no result, but have not been used long enough to prove their lack of benefit.

Blisters so highly recommended by Anstie and others, have not been tried, because the patient said he preferred the disease. The cannabis indica cure of this form of headache, so vaunted by Stephen Mac-

[5] Four weeks later: The slight pain which persisted after the beginning of the anti-arthritic treatment has now disappeared.

[6] Ziemssen's Cyclop. Vol. XI.

kenzie in *Braithwaite's Retrospect* for July last, and before him by Anstie, Reynolds and other writers, has been pushed to intoxicating doses, and, excepting exhilaration, without apparent effect of any nature. This is the most obstinate case of headache in all my experience. During his youth the patient was favored with intervals of relief; but, let me recall his statement, that for *sixteen* years there has not been a single intermission in the pain which, in short, has now been so long a habit with him that he is quite able to be natural and normal in manner and daily life. He has an irritable and therefore a sensitive heart, otherwise his general functions are undisturbed. His appetite is always good, but he has a look of chronic fatigue.

One thing that should not be forgotten is, that he is a smoker, but smokes moderately. I found that early in the day he was very dependent upon his tobacco, so much so that unless he had previously smoked, he could not deliver a morning lecture without dizziness. For that reason I requested him to delay his first smoke by half-hours until it became noon. The patient, meanwhile, being obliged to fight a battle in which he finally conquered, to his benefit. I cannot believe this a tobacco headache, for it began long before the patient smoked at all, and used to be more intense than it now is. The patient's eyes have been often and carefully examined by able occulists, and every defect corrected by the proper glasses.

He is not in any sense a hypochondriac, and I believe the case to be perfectly honest, so much so, indeed, as to give me the uncomfortable suspicion that this headache is my master — thus far at any rate. It can, however, be said that the pain although persistent, seems to be wearing away, for it is less intense than it formerly was.

One important feature in this case should be mentioned: I have quite recently been led to surmise that mental worry has been an influence in this prolonged headache, for it has become apparent that a decrease in the intensity of the pain has coincided with a gradually increasing relief from the cause of the worry.

The cases I have chosen in illustration of my subject do not seem to belong to the class of merely peripheral neuralgias, and for that reason are the more baffling.

I should have been glad to have quoted largely from writers on nervous affections, but, so far as my experience goes, in the domain of inveterate headache the books are well-nigh useless. I hope, however, to learn something from those who speak on my paper. Something more useful, at all events, than Strümpel's[7] final remark on headaches which defy every remedy.

He calmly says: "Still the patient has the comfort of knowing that after years and decades, the affection, when old age is reached, not rarely ceases of itself."

A CASE OF ATHETOSIS.[1]

BY C. P. PENGRA, M.D., BOSTON.

ATHETOSIS is the name of a disease that was first recognized and named by Dr. W. A. Hammond, of New York, in 1871. It is characterized by an inability to retain the fingers and toes in any position in which they are placed, and by continual motion.

Since his first paper in 1871, there have been thirty-eight cases reported from Europe and eight from the United States; and it is this rarity of its occurrence that has induced me to present this case to the Society, with the hope that it may aid in clearing up the obscurity that surrounds its etiology, pathology, treatment and claims as a definite disease.

In all of his writings Dr. W. A. Hammond claims that athetosis is a distinct disease, and, while admitting its analogy to chorea and cerebro-spinal sclerosis, does maintain that it is independent, and can be so diagnosed. In this he is supported by Dreidenberg, in "Vratch," who goes even further, admitting that it is not necessarily a result of hemiplegia, but may even be idiopathic.

Opposed to this view are Putzel,[2] Sturges,[3] Leube,[4] G. A. Hammond and Birdsall,[5] and others.

In all cases reported, there has been noted, at some previous period, a history of epilepsy, chorea, hemiplegia, or other cerebral disturbance; while the case of Leube, after having had athetoid movements for four years, actually developed into, and continued as, ordinary severe chorea. The history of the present case is no exception to the rule; and, considering the lesions most often found in post-mortem examinations, it seems that we are forced to believe that athetosis is too intimately allied to chorea, hemichorea, and the like, to merit its claim of being distinct. The lesions found are in the corpus striatum, optic thalmus, or both, and the cortex cerebri, and are the same as occur in the allied troubles. My diagnosis depends upon the facts, that, in this case, the spasms are limited to the right hand only; that they are uniform, slow and quiet; that the muscles contract or extend together, and are firm and tense; that there is no trembling in any position of the hand or body; that the muscles of that arm are well developed; and that there is no scanning in speech. Hysteria is eliminated by the age at which it began and by the present condition of the patient, Mrs. Anna B. Grover, age twenty-two, born in Marshalltown, Pa. Her family history is very good, excepting slight rheumatic attacks in the father's later life, and paralysis agitans in one aunt.

Her own health has been exceptionally good, with the following exceptions received from her father: —

"Anna was healthy, and perfect as could be until about two and one-half years of age, when a servant girl caught her by the arm, and tried to pull her up stairs. A physician was called, and pronounced it a bad sprain. After the usual bandaging, and carrying in a sling for two weeks, it seemed as well as ever. About three months afterwards, having eaten heartily of green Lima beans, pods, etc., in the garden, she was taken at night with violent spasms, purging and vomiting, followed by great prostration, emaciation, unconsciousness, and paralysis of said arm, and also of speech, that continued for three months. During this sickness she was almost continually in motion, even after getting up. Her voice was entirely gone, and the arm now affected was useless. Many different doctors and treatments were employed. The voice gradually returned, and the arm improved. At first the hand was strongly contracted and painful. The arm was carried behind her back, through shame, till about the thirteenth year, which produced a lateral

[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, May 9, 1888.

[2] Op. Functions Nervous Diseases.

[3] Lancet, March 15, 1879.

[4] Deutsch. Arch. für Klin. Med. p. 242, 1880.

[5] New York Academy of Medicine (Neurol.), October 8, 1886.

[7] Specielle Path. u. Therapie.

curvature, for which a brace was worn eighteen months. All improvement has been from the shoulder towards the hand. Electricity seems to have done the most good."

Present Condition. — Her general health is of the best, since the foregoing. "The hand," as she calls it, is not at all painful: there is no movement at night, or unless her attention is called to it, or she is excited. A decided effort of the will has only the slightest effect upon its movements. At times it contracts powerfully enough to tear a glove: to open it, she must use her left hand, and forcibly extend the fingers to their utmost. When left alone, the contracted fingers will return to normal in from two to five minutes.

In most of the reported cases the movements have been most marked in the thumb and little finger. In her case the thumb and first finger are most affected. The first finger is often forcibly extended, while the others are as strongly contracted. The hand is of little use, as there is no telling when it will take hold or let go. At present she is under no treatment, and is impressed that it is slowly improving.

In all cases the most improvement has been from electricity; and, contrary to theory, the faradic current has proved the more useful. No cure has been reported; and, while the trouble is regarded as incurable, it has never been known to prove fatal.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.[1]

ALBERT N. BLODGETT, M.D., SECRETARY.

DR. C. P. PENGRA presented

A CASE OF ATHETOSIS.[2]

DR. J. J. PUTNAM asked: Are the reflexes of the lower extremity altered?

DR. PENGRA: Not at all. There seems to have been no trouble with any part of the body except the arm and the vocal organs. The lima beans were regarded as a poison by her parents, but from her history she undoubtedly had an attack of gastro-enteritis.

DR. PUTNAM: Are the muscles of the right arm hypertrophied?

DR. PENGRA: There is no enlargement that I know. The muscles seem stronger. They are set and tense.

DR. HAMILTON OSGOOD: What is the condition of the hand in the night?

DR. PENGRA: Quiet. She has never had a contraction in the night. There was a time, a considerable time ago, when she had slight contractions, I believe, but at no time has she had contractions since she has known anything about it.

DR. PUTNAM: I would like to say only a few words about the case; it is an interesting one. I suppose that it is very difficult, almost impossible, to draw any sharp dividing line between these disorders of movement. Dr. Gowers wrote, so far as I know, the most satisfactory paper on the subject a few years ago, and showed how one could trace gradual degrees of difference in these cases through the whole scale from the typical athetosis even, he thought, as far as the late rigidity of hemiplegia; but without going so far as that, it seems very certain that there is only a sliding scale between the typical cases of athetosis and what has been known under the name of post-hemiplegic chorea; the difference consisting partly in the character of the movements, and partly in the fact of the greater or less amount of paralysis associated with them.

I was rather surprised to hear the Doctor say that so few cases have been reported, for I should not say that it is very rare to find cases that are as typical as this case. I would not speak of this as an absolutely typical case, because, as a rule, the movements would not stop in the typical cases when the patient was holding the arm at rest with the hand supported with the other hand, as at present; and then the movements are usually much more varied in character, involving extension quite as much as flexion so that the fingers are thrown about in a worm-like action all the time, while here the flexion predominates, and the flexor spasm is certainly much more marked, I should say, than in typical cases of this disease. However, I do not see how it can come in any other catagory than that of one of the involuntary disorders of motion of that type.

DR. PENGRA: In regard to the number of cases, I referred merely to the number of cases recorded. I have no doubt that there are plenty of cases, as we are quite aware, in most any line of disease, that, while not being recorded, have existed. We must realize that only in 1871 the disease was recognized as such. From the literature that I can read — of course my experience has not been sufficient to warrant my statement — but, from what I can read I am inclined to think that athetosis is an organic disease. I think I so stated in my paper. The disease I do not think I stated as a typical one, from the peculiarity of the motion.

The definition that Hammond gives is "a disease characterized by an inability to control the fingers or toes, and a continual motion." And in his reports of the cases, and he is the father of the disease, you might say, so far as the diagnosis is concerned — in the reports of his own cases there has been such a marked remission that almost the first thing that I thought of in connection with the definition, was the superfluousness of the word, "continual." During the greater part of the time that my patient was suffering from the trouble, and the paralysis, which seemed to have been the precursor of the disease, she was in constant motion that included a large portion of the body, I believe mostly on the right side, but the paralysis was limited to the right arm. The motions of the arm did include movements toward the back to such an extent that she finally put it on the back and left it there.

I do not think I referred to the case as being exactly typical; so far as I can see there is no typical athetosis.

My statement suggested as strongly as I could state from my knowledge of the cases, that it is an organic cerebral disease. The statement of Dreidenberg is the one statement that counteracts all others so far as it goes, to the effect that it may be idiopathic, but his own case does not sustain that, inasmuch as one of his cases were preceded by hydrocephalus and another case by epilepsy; and as to the

[1] Concluded from page 63.
[2] See page 80 of the Journal.

matter of the word "continued," it is certainly not right, because there have been no cases recorded where remissions have not occurred.

DR. C. F. FOLSOM: It seems to me, Mr. Chairman, that it is a very interesting case, and that we want to understand in regard to a good many points what we cannot make out to-night, before calling it clearly a case of athetosis. If it is athetosis it differs in a great many essential respects from what is called typical athetosis. It is a question, of course, how far movement of this sort can be considered as belonging to that group, and due to organic trouble. There doesn't seem to me any marked hypertrophy of the hand, and the movements seem very different from the movements of athetosis; the flexor muscles contract almost instantly, as soon as the resistance is taken away. It is quite possible that there may be a little difference in the knee-jerks. The whole group of cases is certainly a very interesting one. I suppose that nobody is satisfied in his own mind just what to call athetosis, and what not, but the fact of the hand being quiet during sleep, and perfectly quiet so long in the position that the patient has it now, seems to me to make it very unlike what is described as athetosis.

DR. PENGRA: Would the Doctor suggest some name for it?

DR. FOLSOM: As I say, I would not wish to express an opinion without having it under obervation some time. It reminds me of a case that was in Dr. George B. Shattuck's ward in the City Hospital, which suggested athetosis. Strangely enough a case of real athetosis was in the ward at the same time. The former had these features of being quiescent during sleep with no hypertrophy of the muscles, and the contractions of the muscles were sudden and violent and quick, instead of slow and gradual, and there was the feature of quietude for a long time. It was finally thought to be a functional trouble, and in the course of time, by rest and cod-liver oil and tonic treatment, it almost entirely disappeared. It seems to me it is a difficult matter, sometimes, to make a diagnosis between the various forms of anomalous chorea and hysteria and athetosis.

DR. PENGRA: I would say that according to the best authorities that I can find on the subject of diagnosis — that is, in print — this is the essential feature, which I quote from Dreidenburg, "that there is no trembling in any position of the hand or body, that the muscles of the arm are well developed, and there is no scanning in speech; that the movements are uniform and slow and quiet, that the muscles contract and extend together, and are firm and tense."

DR. FOLSOM: He evidently has in mind, I think, disseminated sclerosis, in his diagnosis; in regard to the scanning of speech, etc.

DR. PENGRA: I don't pretend to be an authority on the subject at all. I brought it before the Society to hear some opinions beside my own. Experience, of course, would be a teacher that a young man could not get from books. In regard to the treatment of the true athetosis, there was one writer, in fact this same Dreidenburg, who stretched the median nerve, but he finally had one case where he stretched the nerve and the nerve remained stretched, and as in no previous case he got any result that lasted more than eight days, he finally gave that up, and resorted to electricity entirely.

DR. HAMILTON OSGOOD read a paper on

INVETERATE HEADACHE.

DR. WHITTIER: I heartily concur in all that Dr. Osgood has said with reference to the difficulty of dealing with the subject of inveterate headaches,— that it is quite as difficult as dealing with the disease itself. A difficulty which we all appreciate, with which all have had an experience more or less aggravating. The general practioner, into whose care most cases of this disease come, early and late in life, generally concludes, from his reading and from his personal experience that but little can be done other than by palliative measures; that entered upon in puberty, the disease pursues in the great majority of cases a course more or less paroxysmal, of varying degrees in intensity and of frequency, until the grand climacteric; by which I wish to be understood as intimating that the disease is, by the influence of sex, in the proportion of five females to one male, and that the causative influence of sex, age, heredition and temperament, exceed all other predisposing, in fact all other causes combined.

The difficulty of dealing with the subject of inveterate headache, so far as the literature of the subject is concerned, seems to me to be two-fold; first, in the diffusive character of the articles written by men in general practice, and secondly, in the technical character of the contributions made by neurologists.

Hughlings-Jackson, writes of a discharging lesion of the cerebral cortex in the sensory area. Elsewhere I find that the causative influence of headache is divided into two parts, "hemicrania-sympaticotonica and hemicrania angio-paralytica," rather discouraging terms to the average student of general medicine, for whose instruction I may venture to assume that such writings were intended. We must, however, admit that a great advance has been made in the desirable direction of definition and of eliminating uncertain and undemonstrated causes of this most formidable malady.

Having had the customary and somewhat extended notification of an invitation to speak on this subject this evening, I quickly came to a realizing sense of the difficulties of the subject, and found it needful to apply to the subject the method which for many years I have applied, with results generally very satisfactory to myself, in examining any difficult subject; namely, a method of analysis and tabulation. I, therefore, have the pleasure of submitting for your examination,

A SYNOPTICAL TABULAR VIEW

arranged and grouped according to a system which has always been of the greatest assistance to me in fixing the essential elements of difficult subjects.

I offer this as my contribution to the topic under discussion.

Dr. E. G. CUTLER said: I was much interested, Mr. President, in the first case that Dr. Osgood read. After he spoke to me about the case, in looking for some cases I found that I had nothing of my own, but I found in the library, in the last report of St. Bartholomew's Hospital a collection of fourteen cases not unlike those of Dr. Osgood. It is a paper written subsequent to another published several years ago, of cases in which was found a large increase in the uric acid in the urine, the chief symptom being that of headache. The history of these cases always showed

HEADACHE — A SYNOPTICAL VIEW.

Locality Division (Dr. Hughlings-Jackson)

- Frontal headache (abdominal disorders)
- Vertical headache (cerebral disorders)
- Occipital headache (circulatory disorders)

Pathology of "Inveterate" Headache.

- Congestion
  - Active
  - Passive
- Cardiac hypertrophy
- Vaso-motor disturbances
- Abnormal conditions of blood
  - Hydræmia
  - Defective arterialization
  - Defective excretion
- Meningitis
- Cerebritis
- Abscess
- Tumors
- Softening
- General plethora, or anæmia
- Cardiac or pulmonary diseases
- Affections of
  - Stomach
  - Liver
  - Intestines
- Renal and cutaneous diseases
- Fevers and acute inflammations
- Ague and chronic malarial poisoning
- Gout and rheumatism
- Uterine disorders
- Hysteria
- Neurasthenia
- Syphilis

For Practical Purposes the Etiological Order may stand as follows: —

- **Structural Headache (intra-cranial disease)**
  - Meningitis
  - Cerebritis
  - Abscess
  - Tumors
  - Cerebral hemorrhage
  - General paralysis of the insane
- **Congestive**
  - Active hyperæmia
    - Hypertrophy left ventricle
    - General plethora
    - Mental and emotional disturbances
    - Catamenial irregularities
  - Passive hyperæmia
    - Dyspnœa
      - Cardiac
      - Renal
      - Pulmonary
    - Hepatic, intestinal or peripheral
    - General anæmia
- **Toxæmic**
  - Altered conditions of blood
    - Renal disease
    - Inflammations
  - Alcohol, opium, carbonic oxide, lead, etc.
    - Defective arterialization
  - Syphilis (periostitis, etc.)
  - Chronic malarial poisoning
- **Nervous or sick headache**
  - Megrim
    - Migraine
    - Hemicrania
    - Predisposing causes
      - Sex, age
      - Hereditary tendencies
      - Nervous temperament
      - Deficient tone
      - Anæmia
      - Errors of refraction
    - Exciting causes
      - Exhaustion
        - Physical
        - Mental
      - Psychical disturbances
      - Impure air
      - Bad hygiene
      - Sexual excesses

the existence of gout or some such affection in some member of the family, and the headache usually was periodical, either lasting for a long time, or coming on at irregular intervals, perhaps of hours or days or weeks or months, and lasting for years.

The treatment which was found most successful, I believe, was that of a diet in which there was a great diminution in the nitrogenous matter, a diet largely liquid-farinacious; and also the treatment by hydrochloric acid. It was found by experiments which have apparently not been disproved, that under the treatment with hydrochloric acid the amount of uric acid diminished, and with alkalies it increased, and it was found that at the same time this symptom of headache would be done away with more effectually than by any other means. This article is a very interesting one, and I have not seen that it has been contradicted.

Also, an interesting point in this first case that Dr. Osgood spoke of, was the matter of the tooth. I not do remember whether he said that it was a molar tooth that was affected. In looking over the literature of the subject I think it is claimed that those headaches which depend on the teeth are apt to be in the back part of the head; I think, in his "Disorders of Nutrition and Digestion," Lauder Brunton speaks of several cases where caries of the molar teeth either in the upper jaw or lower jaw was accompanied by a headache in a certain region. I think in the upper jaw he claims that the temporal region and the occipital region are the two seats of the pain, and the first thing that he does, when a man has a headache there, is to examine his teeth, or to send him to the dentist.

This regional method of diagnosis in headache and the treatment that is laid down for it I have had little experience in, so that I cannot judge as to how good it is. In my practice I have had very little of the sort. It is only in the Hospital and Dispensary that I have seen very much of the kind, and it is rather difficult to locate the headache there, I find, because you cannot always get the patients to locate it in the same place. I have, however, seen headaches which depended upon some disease of the teeth, which having been relieved, would subsequently disappear; or where there was tenderness which would be localized in the region of the trifacial, where it has seemed to me that gelsemium has worked well. I have also seen cases where some trouble in the nose was apparently the cause of it, and when they have been sent to the throat-room in the Hospital the pain has disappeared without further treatment. I remember also a case of frontal headache, such as Lauder Brunton says is relieved by acids; at first it seemed to illustrate that, but subsequent examination seemed to show that it was not so.

Dr PUTNAM: Dr Osgood's paper calls to one's mind a large number of very interesting points, and of course it would be impossible to do anything like discuss them all. That there is such a thing as gouty headache in the sense that the word "gouty" is commonly used in this country, as indicating in the most general way a disorder of the assimilation and nutrition, I suppose there can be little doubt. That is to say, that this is one of the many neurotic symptoms which are met with under these circumstances in what is called lithæmia, which is the nearest approach to gout which we have except in special cases. I think it is difficult however, to determine that the lithæmic condition acts as a cause of the nervous symptoms. In the regard to the relation of the heart to headache, I suppose that we might do a good deal more than many of us do in the therapeutics of general diseases by stimulating the heart; although I think it is very hard to say many times whether the heart-sounds are a little weak or not, and that unless one examines with great care and many times, and both before and after treatment, it would be very easy to attribute to the cardiac remedy a result which really belonged to something else.

So far as the occipital headaches are concerned, I feel pretty sure with regard to some varieties of them, that they do not arise from the heart. I have seen a large number of these headaches, as every one must have who has to do with nervous diseases, because they seem to be extremely common, in connection, largely, with over-work, in persons otherwise in good health. I have, indeed, under my care at present, a lady who suffers greatly from this headache, which continues in spite of an improvement in her general health, and she has heart disease. On the other hand, I have treated for a long time a gentleman who prides himself on his vigor and his muscle, and he has had this headache for a very long time also, though not in a severe form; but in his case it has disappeared, apparently without any one being able to say why. At one time he thought that massage helped him, and at another time electricity. He has never presented any signs of weakness of the heart. Of course, I do not mean to imply that Dr. Osgood claims that all cases are due to that cause.

Another cause of occipital headache which should be borne in mind, is one which Dr. Seguin called attention to some time ago, and that is uræmia. I have recently had a patient, a lady with chronic Bright's disease, in whose case this sympton has been present. In regard to the flushing of the ears as occurring in these headaches, as a sign of cardiac disease, I must say that I cannot agree with Dr. Osgood. I think it is well known that flushing or paleness of ears or face is a very common one in migraine. Writers have been divided as to how much influence is to be attributed to alterations in the vascular supply of sensitive membranes as a cause of the pain, or whether the pain may be due to spasm or dilatation of the vessel itself; and for my part I am of the opinion that it is only a concomitant symptom as a rule; it is common to see cases of typical migraine without any such apparent changes and again, vascular changes occur so often in other neuralgias, that it seems to me on the whole that the fairest way of looking at it is as a concomitant symptom, and not as a rule, a cause of the pain.

And that leads me to say that the patient whom Dr. Osgood first spoke of, is one whose case I have known of for a number of years. I have cross-questioned her with great care in regard to the congestion of the ears, and she has assured me that although the flushing of the ears is almost always associated with the headache, the two conditions are not entirely parallel, and that occasionally, sometimes in the course of a long headache the pain may be on one side, and the flushing on the other. As regards the gouty tendency of this patient, it is a very interesting question, and I did my best, as I thought at the time, to treat her from that point of view, a year ago.

It is an interesting and important matter, and I am glad Dr. Osgood brought it up.

I advised her to give up sugar and starch. She did that, and got better. She took, also iodide of potash, and lithia for a considerable time. Then, after a time that diet failed, and we tried an opposite course, giving up the meat, and confining herself to a non-nitrogenous diet, and for a time that also worked very well, so that I became quite convinced, especially as I had seen something similar in another patient with migraine, about the same time, that it was the change in treatment, and not the specific diet that had produced the effect.

In a large number of these cases almost any change of the conditions under which the patient is living will be of service, and I will say in regard to this patient, that she was very free from headache at one time, as a result of a visit to another climate, but a second visit to the same place did no good.

Dr Myles Standish: I want to refer to the headaches caused by errors of refraction, as we have heard very little about them here this evening. A very large proportion of the headaches in young children, children going to school, are due to errors of refraction, and are cured by correction of that error. In older persons very often error of refraction is the cause. I have seen very striking, almost marvellous cases. I remember one young lady who had been an invalid for a number of years, never going out on account of her constant headache; a pair of glasses enabled her to go where she pleased, to go to picture-galleries, and a year later she came back, and said she had never had a headache since. It is not a single case, but we see it very often. I see many such cases every year. I perhaps have had this thing forced upon me from my own experience in the matter. From my boyhood I have had very severe headaches every two or three weeks. When I came to the medical school I took everything that I could find in the form of drug, without any result whatever; but correction of my error of refraction has reduced my headaches. I still have them occasionally, perhaps once in two or three months, where as formerly I had them every two or three weeks; and I have gone a year with only one or two headaches. When a headache lasts all the time, of course it is not so likely to be due to error of refraction as to some other cause, but when it follows close application of the eyes, especially near work, I think error of refraction should always be ruled out before going any further.

Dr. Putnam: I simply want to say that I most sincerely agree with what Dr. Standish has said, and I did not speak of it because I did not think of it at the moment, and this lady had been to Dr. Wadsworth to have the refraction tested.

Dr. Folsom: I wish to speak of a case in connection with Dr. Putnam's allusion to the analogy between these cases and epilepsy. Of course, a sensory discharge may take the place of a motor discharge. I was reminded of a patient who was a type of health in every other respect, who had a very persistent headache for a number of years. She had her eyes examined for astigmatism by a number of ophthalmic surgeons and almost every remedy tried, until it occurred to me that it might be similar to epilepsy in type. The continuous use of bromide, as it is used in epilepsy, relieved her entirely. I wish that Dr. Standish would speak of the difficulty of detecting this astigmatism, and the very minute amount, requiring most careful examination, which may cause headache, an amount that would be overlooked by the ordinary examination. It seems to me it is a matter which physicians in general practice should know, and it is a point which has embarrassed me a number of times. As an interesting point in regard to that, a person may have considerable amount of astigmatism, and yet have no headache except under certain physiological conditions. That is to say, if in perfect health he has no headache at all; he can read and write, and do it late at night; but as soon as he begins to run down, a very moderate amount of reading and writing will cause headaches. I have one patient who, when he finds that he needs glasses, goes on a vacation.

Dr. Standish: It seems to me very rational that when the man's condition gets run down, his ciliary muscle, which is very delicate, might be affected.

Dr. Knapp: I agree with Dr. Standish on the importance and dangers of refractive headaches. In every case of severe persistent headache that I see I try to get a thorough examination of the eyes for any error of refraction. I may say that it is about the only form of reflex headache that I have been led to take very seriously. I have looked for the other forms of headache which are said to be due to displaced uteri, cerumen, and this, that and the other, and as a rule I have not been able to find them. But I do find them in errors of refraction.

Dr. Osgood said he did not understand the rationale of the hydrochloric acid treatment of a uric acid condition, and the proof that alkalies were beneficial in that condition was that his patient steadily improved under the use of them.

In reply to Dr. Putnam, he said that the color of the ear in this case could not be merely a "concomitant" for, that it held a direct relation with the state of the heart, was shown by the fact that during attacks of pain the ear became less and less livid in strict coincidence with an actual increase of power in the first sound of the heart. Dr. Putnam virtually admits that in his cases of occipital headache, fatigue or debility always coexisted. Inasmuch, then, as the heart never rests, is always at work, and has less repose even than the lungs, it must partake of the general debility or fatigue of the body, and consequently has less than its normal power to send the blood through such sudden arterial curves as exist in the vertebral arteries.

In regard to the eyes of the patients he had cited, Dr. Osgood said that in his paper he had remarked that all possible care was given to the eyes of one of them. He had also made himself certain that everything had already been done to assure the proper condition of the eyes of the other two patients. He thought there would be no disagreement in relation to his assertion that inveterate headache was one of the most troublesome and discouraging ailments with which the physican has to deal.

AMERICAN OTOLOGICAL SOCIETY.

Twenty-First Annual Meeting, held at Pequot House, New London, Conn., July 17, 1888.

MORNING SESSION.

The Society was called to order by the President, Dr. J. S. Prout, Brooklyn, who alluded in his opening address to that loss sustained by the Society in the

death of Dr. C. R. Agnew of New York, and suggested that action be taken. On motion, Dr. Gorham Bacon and Dr. W. H. Carmalt were appointed to prepare an appropriate minute on the subject.

Drs. Green, Theobald and Carmalt were appointed as the Business Committee.

DR. E. WILLIAMS, of Cincinnati, on account of failing health, presented his resignation. This was accepted and on motion of Dr. Carmalt the by-laws were suspended, and Dr. E. Williams were elected an honorary member of the Society.

DR. W. H. CARMALT presented the report of the Committee of Conference on the Congress of American Physicians and Surgeons. The report was accepted, and it was decided that when the Society adjourns, it adjourns to meet at the Arlington Hotel, Washington, D. C., September 18th, 1888, at 11 A.M.

On motion of DR. GREEN, it was decided that the meeting should be strictly for scientific matters, and should not be regarded as a business meeting; that is, should not take the place of the annual meeting.

The reading of papers was then taken up.

Two papers by DR. S. SEXTON, of New York, entitled

PERIOSTITIS EXTERNA OF THE MASTOID,

and

SOME OF THE INDICATIONS FOR EXCISION OF THE DRUM-HEAD AND MALLEUS,

were read by title.

A CASE OF AURAL VERTIGO (MENIERE'S DISEASE), RELIEVED BY EXCISION OF THE MEMBRANE TYMPANI AND MALLEUS.

by DR. C. H. BURNETT of Philadelphia,

The patient was a young, unmarried woman, thirty-seven years of age, who six years previously had been under treatment for chronic naso-pharyngeal catarrh, and chronic catarrh of the left middle ear, accompanied with hardness of hearing, tinnitus aurium, and a sense of fulness in the affected organ. Treatment of the catarrhal disease of the ear produced no benefit. After the lapse of six years, the symptoms already named grew worse, and there was superadded marked aural vertigo. The membrana tympani in the line of the malleus handle was found adherent to the promontory, and the consequent retraction of the entire chain of bones was held to be the cause of the aural vertigo and the sense of fulness and of the tinnitus.

The operation of excision of the membrana tympani and the malleus was performed under ether, May 21st last, with entire and immediate relief to the aural vertigo (which before had often been sufficient to cause the patient to hold to a lamp-post for support) and to the sense of pressure and tinnitus, which good result has been maintained to the present time. The hearing was practically unaffected by the operation. The incus was detached from the stapes but could not be removed as it slipped into the attic and grappling for it is not advisible on account of the risk of irritation. Its removal, furthermore, would have no effect in the result of the operation.

DISCUSSION.

DR. J. O. TANSLEY, New York. I have now under my observation a girl on whom this operation was performed some eighteen months ago. When she came to me the whole internal canal was filled with polypi and she presented serious brain symptoms. I took out all the polypi and found a portion of the drum remaining and above a localized necrosis into which a probe passed at least one-fourth of an inch. The patient has been under observation every day for two months, the local necrosis is healed and she is doing well. There are still some brain symptoms. It seems to me that this is a very serious operation and I should hesitate sometime before performing it on account of the results that might occur. In this case the result seems directly traceable to the operation.

DR. C. H. BURNETT, Philadelphia. My patient did not remain in Philadelphia but I was informed that two or three weeks after I saw her a discharge appeared. I think that there is still a slight discharge but the membrane is forming. In another case, a slight discharge appeared soon after the operation but ceased after the membrane had re-formed. The case reported by the last speaker was not one of the class to which I have alluded. The operation was evidently not properly performed if there remained a portion of the membrane and there was necrosis. I have not found this a dangerous operation. No one has reported bad results from this operation properly performed.

DR. CHAS. J. KIPP, Newark. This operation has been performed a number of times by a foreign operator for the relief of tinnitus and vertigo, but he has given it up because it did not relieve these symptoms satisfactorily. He, however, did not have any bad results.

DR. S. SEXTON, New York. I have performed this operation between fifty and one hundred times in the past few years, and have obtained decided benefit in a number of cases of tinnitus and other subjective symptoms. I have known of no case in which there was aggravation. In many cases where there has been no marked tinnitus the distressing sense of pressure has been overcome. The tinnitus is not always relieved by the operation.

DR. BURNETT has referred to the closure of the drum-head. My principal endeavor has been to avoid re-formation of the drum-membrane. In a number of cases where this occurs the good hearing is lost. I have prevented this by the application of a solution of salicylic acid in ether to the margin of the closing membrane. This has succeeded even where the membrane has closed down to a minute opening. In regard to the purulent cases to which allusion has been made, I have operated on a number, and on the whole they are the more satisfactory cases.

DR. B. ALEX. RANDALL, Philadelphia, was invited to take part in the discussion of the Society. He said: It may be that in Dr. Tansley's case the operation was done for the necrosis. The presence of polypi of the size referred indicates too great neglect, and the results are more probably attributable to this neglect than to the operation.

DR. SEXTON, New York, then exhibited a new portable battery for the storage of electro-motor force, and a new head-lantern for the employment of electric light in surgery.

The battery was made at his suggestion by the River & Rail Electric Light Co., of New York. It consists of three cells, and will light a six-candle electric light. The lantern is a modification of that of Trouve, but much lighter, and having a non-conducting base. Such a light is almost necessary in operations on the

ear where ether is used as an anæsthetic. The battery will work continuously for twenty-four hours, and will retain its power for several weeks or months. It may be charged by a dynamo or by twelve gravity cells. When not in use, the storage battery may be kept in connection with the gravity cells.

REFLEX INFLUENCES IN THE PRODUCTION OF NASO-PHARYNGEAL CATARRH,

by Dr. A. H. Buck, New York.

The object of the paper was to call attention to those comparatively remote exciting causes of naso-pharngeal catarrh, which act, so far as it is possible to explain their mechanism, through the intervention of the vaso-motor fibres of the sympathetic nerve. We know little of the direct exciting causes of naso-pharyngeal catarrh. The most common indirect cause is chilling of the surface of the body. According to certain authorities, affections of the teeth should rank next in order of frequency. The author had, however, seen very few cases in which dental disturbances played the part of a promoter of naso-pharyngeal catarrh, or of aural disturbances. Some of those indirect causes which he had observed were then enumerated. Irritation of the gastro-intestinal canal is, in not a few instances, a strong exciting cause of naso-pharyngeal catarrh and of all the aural disturbances growing out of such a catarrh. A male, forty-five years of age, had for years been more or less a sufferer from naso-pharyngeal catarrh, with tinnitus aurium, and slight impairment of hearing, and more recently had begun to suffer from feeble digestion. He noticed that after indulgence in certain articles, there would be abdominal discomfort, and at the same time marked exacerbation of the naso-pharyngeal catarrh. So long as the offending substance was in the stomach there was only a slight sense of discomfort, but in the course of three or four hours, a slightly painful peristaltic movement would set up in the bowels, and simultaneously the secretion from the vault of the pharynx would become unpleasantly active, and the tinnitus would increase. This condition would last for an hour, and then the naso-pharyngeal cararrh would return to its usual state. These attacks were accompanied with the escape of large quantities of gas by eructation. In many patients, usually men, between forty and sixty years of age, where we have reason to believe that the gastro-intestinal tract is habitually in a state of greater or less irritation, we find the faucial mucous membrane red and swollen. In these cases the disease which claims chief attention is the gastro-intestinal affection.

Reflex influences involving the vault of the pharynx and the ear may emanate from more distant sources. A lady of forty years of age complained of distressing tinnitus involving both ears. There had been mild naso-pharyngeal catarrh from time to time for many years. At times she was almost entirely free from tinnitus. I always succeeded in giving prompt relief by applying a moderately strong solution of silver nitrate with a mop of absorbent cotton to the vault of the pharynx. After a time this failed to give relief. It was then learned that for many years, she had suffered with pain in the pelvic regions and back, and at this particular time she was suffering in a more marked degree. A specialist was then consulted, and it was found that there was retroversion of the uterus, and subacute parametritis. These conditions were removed, aad the tinnitus disappeared without treatment to the vault of the pharynx.

The author states that he had spoken of these as indirect causes, that is, as factors competent to aggravate a preëxisting, but perhaps latent catarrhal disease, but he saw no reason why these reflex influences may not in certain cases play the part of direct exciting causes. He considered it impossible to demonstrate the correctness of this belief, and therefore preferred to adopt the view which assigns to them a less independent rôle.

DISCUSSION.

Dr. J. G. Tansley, New York. I meet with many cases of naso-pharyngeal catarrh in young girls, fifteen to twenty years of age, who are decidedly anæmic and chlorotic, and who suffer with constipation; and I have found that this was the cause of the catarrhal symptoms.

Dr. S. O. Risley, Philadelphia. It is pretty generally admitted that nasal and pharyngeal diseases are especially liable to occur in persons of a gouty diathesis. Naso-pharyngeal disease is one of the most uniform manifestations of lithæmia; from the symptoms detailed in regard to the first case of Dr. Buck, I should suggest that the digestive disturbances was probably associated with a lithæmic condition.

Dr. C. H. Burnett, Philadelphia. I have seen a number of cases without deafness, due entirely to dyspepsia. The use of nitrate of silver has been referred to. While this may be of service in other locations, I think that it is the worst application that can be made to the nose or the naso-pharynx. Its use will be followed sooner or later by sclerosis and atrophy. It will apparently cure a hypertrophic catarrh, but the case comes to the rhinologist later with a marked atrophic process in the mucous membrane. I have entirely abandoned the use of nitrate of silver in affections of the nares.

Dr. S. Sexton, New York. I have seen many cases in which irritation in the mouth has been the cause of naso-pharyngeal catarrh and aural symptoms. A lady was brought to me with intense pain in the ear and the head. There was nothing in the condition of the ear to account for these symptoms. Examination of the mouth showed that she was wearing a plate to bring the teeth closer together. The gum was intensely inflamed although the patient complained of no discomfort. The removal of the plate caused a disappearance of the pain in the ear and head. I have seen many such cases.

Dr. J. O. Tansley, New York. I have seen many cases in which irritation of the teeth caused aural symptoms. I agree with Dr. Burnett that nitrate of silver should not be used in the nasal cavity. I have not made such an application for a number of years. There is in catarrh an increased thickening of the basement membrane; this tends to contraction, and the tendency to contraction is increased by the use of nitrate of silver. I employ such agents as induce an exosmosis.

Dr. J. F. Noyes, Detroit. This paper brings up the fact that it is important that in our special practice we should consider general practice. I have always recognized these so-called reflex causes, and have treated cases by searching out these causes. A remarkable case came under my notice of a lady who after confinement developed naso-pharyngeal catarrh.

There was profuse secretion; the trouble continued for a year in spite of treatment. Finally she passed into the hands of a gynæcologist and the cause was then discovered, and treatment of the uterine disease cured the naso-pharyngeal disease.

DR. SAMUEL THEOBALD, Baltimore. I think that where atrophy follows hypertrophic catarrh it is the result, not of the application of nitrate of silver but of the continuance of the catarrh. I question whether a solution of nitrate of silver, ten to fifteen grains to the ounce, will produce sloughing. I regard this agent as a valuable application in disease of the nasal membrane.

DR. CHAS. J. KIPP, Newark. I agree with Dr. Theobald as to the value of nitrate of silver. I rarely use it in a stronger solution than twenty grains to the ounce and neutralize it afterwards by salt water.

DR. HENRY D. NOYES, New York. I have frequently noticed the connection between the lithæmic condition and certain affections not only of the naso-pharynx but also of the external auditory canal. There are certain eczematous conditions associated with the gouty diathesis.

DR. F. P. CAPRON, Providence. I have seen a number of cases of so-called hay-fever in which the premonitory symptoms were those of indigestion; for two or three weeks before the time of the onset of the regular attack, the patient would complain of digestive disturbance.

(To be continued.)

AMERICAN OPHTHALMOLOGICAL SOCIETY.

TWENTY-FOURTH Annual Meeting, held at the Pequot House, New London, Conn., July 18 and 19, 1888.

WEDNESDAY, FIRST DAY. MORNING SESSION.

The Society was called to order by the PRESIDENT, DR. W. F. NORRIS, of Philadelphia. The deaths of Dr. C. R. Agnew, Dr. E. G. Loring and Dr. Joseph Aub, were reported.

Dr. H. P. NOYES, New York, read a memorial of the late Dr. C. R. Agnew.

Drs. W. H. Caswell and C. S. Bull were appointed a committee to preface an appropriate minute in regard to the death of Dr. E. G. Loring, and Dr. Charles J. Kipp was appointed to preface a similar minute in regard to the death of Dr. Joseph Aub.

The members of the American Otological Society were invited to take seats with the Society. The following gentlemen were invited to take part in the discussion, Dr. Koler (Vienna), Dr. Skinner and Dr. Nodine.

A CONTRIBUTION TO THE TREATMENT OF MEMBRANOUS OPACITIES IN THE VITREOUS,

by DR. C. S. BULL, New York.

These opacities in the form of membranes or shreds are rarely freely movable, and usually resist internal treatment. Operation by incision with a needle was first performed by Von Graefe. In the experience of the writer the operation had been found useful. Some opacities as a result of hæmorrhage or inflammation of the choroid sometimes respond to internal remedies, but as a rule these failed. By incision of the membrane a direct improvement of vision may be obtained and the process of absorption may be stimulated. Posterior opacities are more easily reached, with less danger to the lens and with more favorable results, than in the case of anterior opacities. The author has done this operation in seventeen cases of chronic membranous deposits in the vitreous. In some cases the ordinary decision needle was used; in others a broader needle and in a few a slender cataract knife. Cocaine was employed in all cases. The point selected by preference for the introduction of the needle was just in front of the equator of the eye and below the insertion of the external rectus muscle. There seems in this operation to be no danger of loss of vitreous through the small opening, nor is there danger of hæmorrhage. The puncture should be posterior to the ciliary process and pressure with the forceps should be avoided. Little or no reaction follows the operation as a rule. A protective bandage is required only a few days. Antiseptics were employed in all cases.

The details of the seventeen operations on fifteen patients were given. Fourteen showed decided improvement in vision. Three were failures. There was no loss of vision from the operation in any case. The operation is appropriate in certain cases, but it is wise to wait until all inflammatory symptoms have subsided before attempting any operative procedure. The eye should be absolutely free from all irritation before surgical interference is attempted.

DISCUSSION.

DR. W. F. MITTENDORF, New York. I think that vascularity of the vitreous membrane should always speak against operations of this kind. Vascularity even if all inflammatory signs have subsided, points to a fatal prognosis.

A CASE OF PULSATING EXOPHTHALMUS CURED BY LIGATION OF THE COMMON CAROTID,

by DR. F. BULLER, Montreal.

Pulsating exophthalmus occurring spontaneously or as a result of traumatism is rarely met with. The pathology is so well understood that little remains to be done in this direction at the present time. In the matter of treatment, there is no rule so firmly established but that much must be left to the judgment and discretion of the surgeon.

The author had seen four cases of this affection. In the first the condition followed a blow upon the head. Some months after the appearance of the pulsating exophthalmos, ligation of the carotid was performed, but the patient died in the course of a few weeks from repeated attacks of epistaxis.

The second case has already been reported.

In the third case the affection followed a blow on the brow from a piece of iron. The patient was seized with severe epistaxis and died in a few minutes. There was found a depressed fracture of frontal bone with a fissure extending across the orbital roof and body of the sphenoid bone directly beneath the cavernous sinus. As a result of caries of the bone there was a direct communication between the nasal cavity and the internal carotid artery.

The fourth case, the subject of the paper, came under observation May 24, 1888. A young man aged twenty-eight, fell a distance of twenty feet, striking the right side of head, rendering him unconscious for twenty-four hours. After the swelling had subsided the patient noticed diplopia, one image being higher and less distinct than the other. There was also a

loud beating sound in the right ear. Two weeks before coming under observation, prominence of the eye was noticed. There was still diplopia, the higher image moving up and down with each heart-beat. Four days before coming under notice, the pain became intense. On examination there was at the inner extremity of the right brow a swelling which imparted a distinct thrill to the finger. There was also a harsh bruit. Pressure over the common carotid diminished the intensity of the thrill and lessened the pulsation.

It was decided to ligate the common carotid in the upper part of its course, and this was done May 25th, two ligatures being applied and the vessel divided between them. The immediate effect was softening of the swelling, partial reposition of the eye-ball, great diminution in the pulsation and disappearance of the bruit. The patient made a good recovery and left the hospital with very little prominence of the ball. V = $\frac{20}{20}$: movements normal.

PULSATING EXOPHTHALMUS,

by Dr. Charles J. Kipp, Newark.

A lady, seventy-six years of age, presented herself with the history that shortly after striking the head in a fall she noticed noise in both ears, followed by protrusion of both eye-balls, the right $\frac{4}{10}$ inch; the left $\frac{3}{10}$ inch. There was no marked pulsation, but there was a thrill and a bruit could be heard over the anterior half of the head. This could be arrested by compression of the right carotid and partially so by compression of the left carotid. In view of the age of the patient, no radical measures were recommended, but it was suggested that pressure be made on the right carotid as often as convenient. Iodide of potassium was also given. Three months later the patient stated that the noise had suddenly disappeared. This was followed by disappearance of the exophthalmus first in the left eye and subsequently in the right. The external appearance of the eyes are now normal. There is, however, a marked pulsation of the right subclavian artery, but no aneurism can be discovered.

DISCUSSION.

Dr. S. D. Risley, Philadelphia. I would call attention of the Society to the fact that Dr. Harlan reported a case of this kind cured by compression, and that I also reported a case in which compression of the vessel for a short time was followed by disappearance of the symptoms and subsidence of the exophthalmus.

AN ANALYSIS OF 576 CASES OF THE REFRACTION OF HEALTHY HUMAN CORNEÆ, EXAMINED WITH THE OPHTHALMOMETER OF JAVAL AND SCHIOTZ,

by Dr. Swan M. Burnett, Washington.

These 576 corneæ belonged to 301 persons examined within a little over a year by Dr. Burnett. Pathological states of the cornea were excluded for consideration at another time. The corneal refraction was found to be the same in both eyes to within 0.25 D. in 110 persons. The horizontal meridian (to within 5°) was the least refractive (astigmatism according to the rule) in 420 eyes. The vertical meridian was the least refractive (astigmatism against the rule) in 20 eyes. In 88 eyes the meridians were oblique. In 58 eyes, the difference in the refraction of the two meridians was less than .25 D. In 101 eyes there was *emmetropia*. The largest number has a corneal refraction of from 44 D. to 45 D.; the next largest from 43 D. to 44 D. The strongest corneal refraction was 47 D., the weakest 39 D. In 55 eyes, there was *simple myopia*. The strongest refraction in the weakest meridian was 47.25 D.; the weakest 39 D. The corneal refraction did not in any considerable number of cases bear any close relation to the degree of the myopia. *Simple hypermetropia* was present in 59 eyes. Weakest refraction in the weakest meridian was 40.5 D.: the strongest 46 D. As in myopia, the corneal refraction was no indication as to the degree of general hypermetropia, *myopic astigmatism* was found in 140 eyes. In 4 eyes, the general astigmatism was greater and in 11 it was less than the corneal. In 14 eyes, the difference in the axes of the corneal membrane and that of the prescribed glasses was greater than 5°. *Hypermetropic astigmatism* was present in 96 eyes. In 4 eyes, the corneal astigmatism was greater and in 2 eyes it was less than the general. The axes corresponded in all but 9 eyes. *Compound myopic astigmatism* existed in 63 eyes. In all but 7 eyes the corneal and general astigmatism corresponded and in 44 eyes the axes corresponded. *Compound hypermetropic astigmatism* was found in 55 eyes. In 31 corneal and general astigmatic meridians corresponded. The corneal and general astigmatism was the same in all but 4 eyes, *mixed astigmatism* was present in 8 eyes. In 4 the corneal and general astigmatism was the same. In 2 the corneal was less and in 1 greater than the general. The corneal and general astigmatic meridians were the same in 5 eyes.

In 42 eyes the general astigmatism was against the rule, while in only 18 *of these eyes* was the corneal astigmatism against the rule. From examinations under a mydriatic the author felt himself warranted in thinking that many cases of lenticular astigmatism are due to an oblique position of the lens.

Corneal astigmatism is, with very few exceptions, according to the rule (vertical meridian, the stronger). From a study of these statistics the author feels warranted in concluding that while the corneal refraction gives no indication of the general refraction of the eye, its astigmatism in the vast majority of cases, expresses the general astigmatism both as to degree and direction of its axis, and considers, therefore, the instrument of Javal and Schiotz one of, if not the most important instrumental means for the diagnosis of the anomaly. He does not think astigmatism more productive of progressive myopia than other forms of ametropia.

DISCUSSION.

Dr. H. D. Noyes, New York. I have used the ophthalmometer of Javal and Schiotz with great satisfaction. In the immense majority of cases the evidences of the ophthalmometer without the use of atropine have corresponded with the evidences of the trial case. The amount of astigmatism and in a general way the axis of the astigmatism is obtained. The use of this instrument has led me to believe that mixed astigmatism is more common than we usually imagine. I have also noted the influence of the eyelids in altering the curvature of the cornea. I have also satisfied myself that the tension of the eye-muscle modifies the curvature of the cornea. I have also noticed in some cases a pulsation of the corneal reflex due to the fact that the cornea was so thin that the

circulation of the eye impressed itself upon it. This I have seen particularly in conical cornea. The use of this instrument does away to a large extent with the necessity for the employment of atropine.

DR. SAMUEL THEOBALD, Baltimore. I infer that the author thinks that when a midriatic is employed, the lenticular astigmatism is done away with. My experience leads me to believe that the asymetrical condition in the lens, does not at once disappear on paralysis of the ciliary muscle. I think that the discrepancy between the total and general astigmatism may often be accounted for by this persistent asymetrical condition of the lens. This condition gradually disappears after suitable glasses are worn.

DR. B. ALEX RANDALL, Philadelphia. I cannot agree with the author that simple astigmatism is so common and predominates over other forms. Taking the records of the Hospital of the University of Pennsylvania for the last ten years, I find 4,000 refraction cases determined almost without exception under a midriatic. Compound hypermetrophic astigmatism constituted about 40%; compound myopic astigmatism constituted 30%; simple myopia and hypermetrophia about 8% and 12% respectively; mixed astigmatism only about 1 or 2%; compound astigmatism constituted at least 70% of the total number of cases.

PROGRESSIVE HYPERMETROPIC ASTIGMATISM,

was the title of a paper read by DR. J. B. EMERSON, of New York.

DR. EDWARD JACKSON, Philadelphia, exhibited a new form of Cataract Knife. It was designed to combine the advantages of the Græfe and Beer knives. The point, resembling that of the Græfe knife, allowed the puncture and counter-puncture to be made in the same way as with the Græfe knife; while the rest of the blade having the shape of Beer's knife enabled one to complete the incision as with that instrument. With it the puncture and counter-puncture are completely under control, the flap is completed at a single thrust, the aqueous is not lost until the incision is nearly finished and the counter-pressure by the back of the knife assists in steadying the eye.

DR. J. O. TANSLEY exhibited the following instruments: An improved Lachrymal Syringe, in which the nozzle ends in a closed bulb, the opening being on the sides of the tube; a Clamp to prevent the passage of atropine solutions through the lachrymal duct into the nose in cases where the free use of atropine is called for; an improved Lachrymal Probe, and improved Style.

DR. SAMUEL THEOBALD exhibited Probes made of aluminium.

ŒDEMA OF THE CHOROID AND RETINA,

by DR. EDWARD JOHNSON, Philadelphia.

The author reported the case of a young man struck in the eye with a marble or small stone causing a bruise of the eye-ball. The ophthalmoscope showed localized swellings of the choroid and retina, at the posterior pole of the eye; the choroidal spots having the usual grouping of ruptures of the choroid in that region. These spots disappeared in about a week. There was also at first some 0.75 D. myopia astigmatism which gradually diminished, and in three weeks entirely disappeared, leaving the sight perfect.

SYMPTOMATIC MYOPIA,

by DR. W. F. MITTENDORF, of New York.

But little attention has been called to myopia as a symptom of various affections of the eye. Three forms of myopia may be spoken of, axillary, refractive, and symptomatic. The latter form may be caused by traumatism, but more commonly by diseased conditions. It may be produced by displacement of the lens forward. More frequently it is due to swelling of the lens accompanying beginning cataract. This is sometimes relieved by the use of concave glasses; very strong glasses being occasionally required. Plastic exudations may also cause myopia, but these usually so interfere with vision that it is impossible to demonstrate the existence of myopia. Glaucoma, serous choroiditis and iritis are frequently accompanied with myopia as a symptom. A number of illustrative cases were cited. In these cases the myopia is not permanent but as the disease disappears, the myopia passes away, leaving the refractive condition of the eye the same as before the attack.

DISCUSSION.

DR. J. O. TANSLEY, New York. Some years ago, I reported a case of localized exudative choroiditis just beneath the macula, with myopia. The myopia gradually increased as the attack reached its height and as the inflammation subsided, the myopia passed away.

DR. CARL KOLER, Vienna. I think that in these cases of myopia in iritis, the condition may be due to the irritation of the ciliary muscle. There is hyperæmia of the ciliary body, and as the irides are contracted, it is to be supposed that the ciliary muscle is also contracted. Although atropine may be used there is not full dilatation of the irides. It is, therefore, reasonable to suppose that the myopia is a result of spastic contraction due to inflammation.

DR. S. D. RISLEY, Philadelphia. In a few instances it has seemed to me that in these cases of iritis and choroiditis the myopia was due to the dread of light and the cramp of the lids.

DR. JOHN GREEN, St. Louis. In two attacks of iritis of which I was myself the subject, I carefully studied this myopia. In my case the eyes were completely under the influence of atropia. The pupils were dilated and the ciliary muscles paralyzed.

Adjourned until 8 P. M.

(To be continued.)

— The annual meeting of the Rhode Island Medico-Legal Society was held July 19, 1888. The following officers were elected: *President*, Dr. G. D. Wilcox; *Vice-President*, Dr. J. H. Morgan; *Secretary* and *Treasurer*, Dr. F. B. Fuller. A paper entitled "Belgium and her Insane Institutions," was read before the Society, by Clark Bell, Esq., of New York.

— The *St. Louis Medical Journal* is also among the prophets. Among its aphoristic maxims are the following: The physician who values his time and advice is the man who is appreciated. He who sells himself for nothing generally gets all he is worth. He who goes for half-price, when patients are able to pay a reasonable fee, goes for more than he would bring on the market. A community never values a physician higher than he values himself. He who works for love may gain the reputation of a good Samaritan, but good Samaritans are not all good doctors.

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THE FOURTH YEAR AT THE HARVARD MEDICAL SCHOOL.

It has been an interesting question among those anxious for the welfare of the Harvard School, but not informed as to its plans, what course would be adopted as to its fourth year. The recommendation by the faculty of a four years' course has not hitherto met with an encouraging response on the part of the students. Some few have seen the advantage of the more extended course of study, but the fourth-year class has not increased in numbers nor in scholarship, and no great progress has been made towards the establishment of a compulsory four years' course. Certain changes in the curriculum are already announced which seem calculated to make a very desirable change. The faculty retain the recommendation of four full years of study, and still expect that the time may not be very far distant when four years shall be compulsory. The changes are mainly in accord with the dominating idea at Harvard, of allowing the student an election in his courses of studies, though fortunately the existing three years' curriculum is not disturbed.

In addition to the existing requirements for the third-year degree, each candidate will be obliged to take examinations from a list of elective studies, to be chosen at the commencement of the year. He may choose to pass an examination of two hours in either of the following subjects, — Dermatology, Diseases of the Nervous System, Diseases of Children, or Gynæcology: or he may pass two examinations, of one hour each, in any two of the following subjects, — Ophthalmology, Otology, Mental Diseases or Legal Medicine.

The course of study for the fourth year will be entirely elective. To obtain the fourth-year degree each candidate must pass examinations amounting to ten hours chosen from the following list of studies, the choice to be made at the commencement of the year and to be regarded as final —

Examinations of two hours each in Ophthalmogy, Dermatology, Otology, Clinical Obstetrics, Gynæcology, Diseases of Children, Diseases of Nervous System; of one hour each in Mental Diseases, Laryngology, Operative Obstetrics, Operative Surgery, Legal Medicine, Hygiene, Bacteriology. The above are entirely distinct from the third-year courses of the same title, and in addition there will be given clinical and laboratory courses in Orthopædic Surgery, Genito-urinary Diseases, Syphilis, Ovarian Tumors, Clinical Microscopy, Preparation of Food for Infants and Invalids; in these courses no examination is required.

The hospital service in Boston differs from that of many cities in that candidates for hospital positions are required not to have received their medical degree. Such positions are awarded after a competitive examination, for the most part, and are usually taken at the close of three years of study. The successful candidates for these positions have usually taken later the degree of the three years' course, though evidently among the best of the students: a condition which has without doubt done something to render the fourth degree less popular. For the future the fourth-year degree is attainable by hospital internes under the following conditions:

House-officers in the Massachusetts General Hospital, Boston City Hospital, Carney Hospital, McLean Asylum, Massachusetts Charitable Eye and Ear Infirmary, Boston Children's Hospital, and Free Hospital for Women, may obtain the fourth-year degree by entering the fourth class, passing an examination in the elective amounting to five hours, and presenting a certificate of satisfactory performance of duty in the hospital for a period equivalent to the school year, and an acceptable thesis or clinical report based upon observations made during their service. On account of the shorter services in the Lying-In Hospital and Adams Nervine Asylum, internes of these institutions will be required to pass an aggregate of seven hours examination, and present a certificate and thesis as above.

Provision is also made for students who desire to devote their fourth year to special Laboratory Work, and the fees of the fourth year are diminished by one-half to men who complete four years in the school and to a nominal sum for hospital house-officers.

This course has not been elaborated without the careful consideration of other plans. It will doubtless prove attractive to many who failed to be attracted by the very laborious courses previously presented. It is to be expected that its numbers will be recruited from the start from the hospital internes, and it certainly presents on paper a plan which bids fair to be successful. The elective system is given a sufficient representation in the new plan; to allow it to interfere with the studies hitherto required in the first three years would certainly be a mistake.

HYPERTENSION OF THE ARTERIES: THERAPEUTIC INDICATIONS. II.

In angina pectoris, there is exaggerated and permanent arterial tension, and here, as in instances cited in the former paper, the beneficial influence of cardio vascular depressants, such as nitrite of amyl, glenoine, morphine, which open up the capillary sluiceways of the organism, is seen, while digitalis which raises arterial pressure, but aggravates the condition.

Permanent hypertension has been supposed by some excellent authorities to belong exclusively to

Bright's disease or to that form of the latter known as interstitial nephritis. As the older theory puts it, the heart is overworked, owing to the obstruction in the renal circulation, and hypertrophies; more work is also imposed on the arterio-capillary system, and changes in the arteries and minute vessels take place (increase of muscular tissue, fibroid thickening). This theory was eventually abandoned for what is now known as the "stop-cock theory," which makes both heart and arteries hypertrophied in a constant antagonistic struggle, the heart laboring to force into the tissues blood poisoned by waste elements which the kidneys, being diseased, have failed to eliminate, the arteries contracting preternaturally in the endeavor to shut the blood out of the tissues. A third theory which has had many advocates, notably Mahomed, who defends it in his treatise on "Chronic Bright's Disease without Albuminuria," and other papers, regards certain generalized circulatory changes, a condition known as arterio-capillary fibrosis, as primary, and Bright's disease only as one expression of this alteration of the bloodvessels. Without doubt this is an extreme view; there is too much evidence that in very many instances the renal disease comes first, and the arterial lesions are secondary to blood changes therefrom ensuing. The existence, however, of a general arterio-capillary fibrosis, apart from any renal affection, or at least, anterior to such affection, is very probable, and Huchard in the paper referred to last week, and to which we have again to call attention, presents some weighty considerations in support of his proposition that "arterial hypertension is the cause of the arterio-sclerosis, preceding for a considerable time the evolution of divers maladies (cardiopathies and arterial nephritis) which are themselves dependent on the vascular sclerosis." The order of facts is this: arterio-capillary spasm, arterial hypertension, arterial sclerosis, visceral sclerosis. Huchard cites instances where the long precedence of the arterial condition seemed clear to him; where for years there were the signs of exaggerated arterial tension (the sphygmographic tracings, the diastolic resonance of the aorta, the dyspnœa of exertion, etc.), then finally all the symptoms of interstitial nephritis manifested themselves. Such cases are often attended with considerable œdema of the lower extremities long before there is a trace of albumen in the urine. Here are witnessed the benefits of an exclusive milk diet, of iodide of sodium, of trinitrine, which often bring down arterial tension from 27–30 to 20, or even below this figure, as is shown by the sphygmomanometer. By such treatment the worst issues are often staved off for years, or kept permanently in abeyance.

The pathogeny of arterial hypertension is to be sought in the state of the heart, of the blood, or of the vessels. As for the influence of the heart, this would seem to be very limited, as, in this writer's estimation, it is doubtful if cardiac hypertrophy ever precedes a condition of arterio-capillary fibrosis.

The quantity and quality of the blood, Huchard thinks, have a restricted but real influence. If the water of the blood is augmented (serous plethora), arterial hypertension must ensue. The quality of the blood has a certain rôle. It is known that saturnism causes arterial hypertension; and this is undoubtedly the case with toxic products generally, which are retained in the blood through failure of the emunctories to eliminate them. But the most efficient cause of hypertension is *spasm of the arterioles and capillaries.* This may be brought about by various agencies: gout, "which is to the arteries what rheumatism is to the heart;" rheumatism; the influence of tobacco; the abuse of alcoholic stimulants. Heredity has an important predisposing influence. Overwork has undoubtedly an etiological part; and so have mental emotions, which, Huchard says, often determine attacks of vascular spasm, and contribute to produce temporary or permanent hypertension. Huchard finds arterio-sclerosis to be especially frequent among members of the medical profession: this he attributes largely to the hurry, anxiety and overwork incident to this profession.

Among the symptoms of hypertension may be mentioned the oppression, the dyspnœa on exertion, palpitations, which are often of a distressing character, local accessions of algidity, of pallor, etc. Broadbent mentions besides, a tendency to somnolence, headache, vertigo, certain neuralgias, in a word, all the morbid incidents peculiar to arterial spasm. Acute dilatation of the heart and aorta often accompany this condition of vascular hypertension; this is revealed by peculiar signs, such as the diastolic aortic resonance alluded to in the previous paper. At the same time, the precordial shock is increased, giving to the organ the character of the "impulsive heart." The beatings of the arteries are exaggerated, the radial pulse is "strong, vibrating, concentrated, tense," *corded*, as the old writers called it.

The therapeutic indications are clearly deducible from the foregoing considerations. The heart must be sustained, and the peripheral obstacles diminished: everything capable of bringing about vaso-constriction and arterial hypertension must be avoided, all medicines, for instance, such as chloral, ergot, lead, belladonna; beverages, such as tea, coffee, alcoholic stimulants; tobacco, excesses of the table, too animalized a diet; finally, excessive or depressing emotions, and overwork of mind or body.

Among medicines, such as are known to be vaso-dilators or depressors, are indicated, such as opium, aconite, trinitine, nitrite of amyl, the iodides. A mixed diet is to be recommended, such as white meats, fresh vegetables and salads, bread and fruits and milk. In some cases of great vascular fulness, abstinence from liquids, the "dry diet" of Chomel is to be advised. The functions of the skin and other emunctories should be promoted, the hours of sleep regulated, and exercise should be just sufficient: in fact, the most effective treatment is the prophylactic.

MEDICAL NOTES.

— The medical officer in charge of the Marine-Hospital Service reports from the Ship Island Quarantine Station, Miss., that the captain and four men died of yellow fever, on the Norwegian bark "*Magnolia*," on the voyage from Rio Janeiro. The vessel was bound for Pensacola, Fla., and is now undergoing quarantine at Ship Island, having been sent to that station by the Pensacola health authorities.

Two cases of yellow fever were reported at Tampa, Fla., July 16th, one convalescent, and the other probably fatal. There are several cases at Manatee. On July 19th, the governor of Florida made application to the Secretary of the Treasury for aid to the local health authorities in suppressing the disease, and the Secretary informed the Governor, that aid would be furnished through the Marine-Hospital Bureau. A house inspection at the villages named will be immediately commenced.

Seventeen deaths from yellow fever were reported at Havana, Cuba, for the week ending July 7, 1888.

The health officer at San Francisco, Cal., telegraphed under the date of July 18th: "Cholera reported epidemic at Hong-Kong." The State Department has cabled the consul at Hong-Kong to report the facts.

— We learn from an English exchange of the sad death of Mr. Edmund Gurney, Secretary of the Psychical Society, and author of "The Power of Sound" and other works. The deceased gentleman suffered from obstinate sleeplessness and occasional neuralgia, and succumbed to an overdose of chloroform which he incautiously took one evening when alone at the Albion Hotel, Brighton, whither he had gone for a night on business. This emphasizes the danger of the reckless habit of the self-inhalation of anæsthetics.

— Dr. Thomas Wood recently showed before the Obstetrical Society of Edinburgh an experiment showing that the caudal extremity of the fœtus is specifically heavier than the cephalic. (*Edinburgh Medical Journal*, July, 1888.) In a glass vessel was put a fluid composed of salt water and spirit of such a density that the fœtus which it contained neither rose to the top nor fell to the bottom, but was suspended in the centre — in fact, the specific gravities of the fluid and of the fœtus, were almost if not entirely equal. The position which the fœtus assumed, therefore, showed which is the specifically heavier end, and this, as was seen, is the caudal extremity. The fœtus floats in the fluid almost in a vertical position with the head uppermost.

— Dr. Thomas Linn, writing from Paris to the *Philadelphia Medical Times*, says, that some attention has been paid to the recent treatment by which the old Emperor of Brazil was brought out of his illness at Milan, and he is now fast recovering at Aix les Bains. It was hypodermic injections of caffeine that saved him, and in this connection it should be remembered that caffeine is an uncertain drug, that has to be given in sufficient quantity in heart failure, and yet if too much is given it may prove fatal. It is also very insoluble in most of its salts, such as the citrate, etc., and it may be well in this connection to give Dr. Huchard's formula:

℞	Caffeine.	2 grammes
	Benzoate of soda.	3 "
	Distilled water.	6 "
M	(Make the solution while it is warm.)	

From four to six injections per day, the usual syringeful used each time of this solution, is the proper dose. It will be found to act as a general tonic, a cardiac tonic, and above all as a *diuretic*, being perhaps the best of all for this purpose. The salts of caffeine are not used here now at all but the drug itself combined with benzoate of soda to make it soluble.

— Dr. Richard J. Levis in his presidential address on the "Traditional Errors of Surgery," (*Philadelphia Medical Times*, July 21st,) before the Medical society of Pennsylvania, tells some truths which are not gratifying about professional prejudice, especially in connection with the subject of ether anæsthesia, and ovariotomy. As to the former, he quotes from the *Philadelphia Medical Examiner*, 1846:

"We should not consider it entitled to the least notice but that we perceive, by the *Boston Medical and Surgical Journal*, that prominent members of the profession in that city have been caught in its meshes. We are persuaded that the surgeons of Philadelphia will not be seduced from the high professional path of duty into the quagmire of quackery by this will-o'-the wisp. We cannot close these remarks without again expressing our deep mortification and regret that the eminent men who have so long adorned the profession in Boston should have consented for a moment to set so bad an example to their younger brethren, as we conceive them to have done in this instance. If such things are to be sanctioned by the profession, there is little need of reform-conventions or any other efforts to elevate the professional character. Physicians and quacks will soon constitute one fraternity."

Regarding the infant operation of ovariotomy, Professor Charles D. Meigs thus emphatically expressed himself: "I detest all abdominal surgery." "I am free to say that I look upon all operations for the extirpation of the diseased ovary as not to be justified by the most fortunate issue in any ratio whatever of the cases." "Dr. Atlee's coolness in cutting open a woman's belly does not, I think, entitle him to judge more clearly than I, as to the morals of such surgery. . . Dr. Atlee likes ovarian operations; on the contrary I detest them, and should be glad to see them prevented by statute."

. . . "I should be glad if you would look over the statistics of ovariotomy to discover how many bellies have been ripped up by the surgeons in the expectation of having the blessed satisfaction and *praise* of curing a tumor. Suppose a surgeon to open a woman's belly to extirpate an ovary; that he finds no ovary there; that he then sews up the gash; and next, that

she dies! What should the attorney-general say? It would scarcely be unfair to say, of all the fatal results of operation for extirpation of the ovary, that the patient is compelled to render her soul to God, and her carcass to the surgeon."

NEW YORK.

— Some alarm was recently caused by the appearance of small-pox among the patients in the city insane asylum on Ward's Island; but the most vigorous measures were at once taken to prevent the spread of the disease, including a general vaccination of the inmates. Five cases in all were removed to the small-pox hospital on North Brothers Island, and it is probable that no additional cases will now develop. The disease appears to have been carried from the city by some of the attendents in the asylum.

— The Health Department has issued a notice calling attention to the fact that a large proportion of the records of births, marriages and deaths received for filing in the Bureau of Vital Statistics are written in aniline inks, which will be illegible in a few years. The Board therefore requests that in documents sent them, only good and permanent black ink be used.

Miscellany.

THE HARMLESSNESS OF CERVICAL LACERATIONS.

DR. EMIL NOEGGERATH has attacked an article of the gynæcologists' creed in the following radical utterances: —

(1) Women with uterine disease conceive more easily if the cervix is lacerated than if it is intact. They abort less often in the first condition than in the second.

(2) The position of the uterus is not influenced by cervical laceration.

(3) The uterine axis is not lengthened by cervical laceration.

(4) Erosions and ulcerations are equally frequent in lacerated and in intact cervices.

(5) Erosions of the lips are never the direct result of cervical laceration.

(6) Disease of the tissues of the cervix are not more frequent in lacerated than in uninjured cervices.

(7) Cervical tears have no influence on the development of uterine disease either as to intensity or frequency.

In his concluding remarks he recommends that lacerations and tears be left alone.

LABORATORIES AND MUSEUMS OF HYGIENE FOR TEACHING PURPOSES.

DR. PROUST, the Professor of Hygiene in the Faculty of Medicine, Paris, recently gave a lecture congratulating the students that this school is at last to have a laboratory and museum specially designed for use in the teaching of practical hygiene.

The model for buildings of this kind has been the institute built and equipped by the University of Munich for the use of Professor Von Pettenkofer. Laboratories specially devoted to giving instruction in hygiene now exist in Berlin, Leipzig, Göttingen, Buda-Pesth, Amsterdam, and in connection with the medical faculties of most of the great universities. Of these the largest and most completely equipped is that at Berlin, under the direction of Dr. Koch, which has in connection with it a large museum containing most of the exhibits which were in the Berlin Exposition of Hygiene in 1883.

In France the organization of such an institution is just beginning, Dr. Proust stating that thus far he has had at his disposal neither laboratory nor museum nor assistance or material of any kind in teaching.

In this country the first steps towards the organization of a laboratory and museum of hygiene have been taken at the School of Mines of Columbia College in connection with the departments of chemistry, engineering, and biology, and similar materials exist and are used in the Massachusetts Institute of Technology.

The amount and variety of apparatus, models, etc., required for effective teaching in practical hygiene, whether this instruction is to be given to medical students or to architects and engineers, is very considerable, but it is in every way worth its cost, and the institution which is best provided with such material is the one which, in the long run, will succeed the best. For the last few years the tendency has been to consider a laboratory of hygiene as synonymous with a bacteriological laboratory, and for this there was good reason. There are, however, many problems to be worked out in the former which find no place in the latter, and while the hygienic laboratory must include all the means of bacteriological research, it should also contain many things whose relations to bacteria are very remote.

The only museum specially devoted to hygiene which we have in this country is the one under the direction of the Medical Department of the United States Navy in Washington. This contains a large amount of interesting material brought together by the first director of the museum, Dr. J. M. Browne, who is now Surgeon General of the Navy, but it is not well housed, being overcrowded, and is not located where it would be of the most interest. It is not at present used for teaching purposes.

It seems not improbable that a well-equipped laboratory and good museum for instruction in practical sanitation will be soon formed at the School of Mines in New York where it is needed and will be most useful, and it is probable that in all our technological schools such institutions will soon be developed.

To what extent practical instruction in hygiene is given in medical schools in this country we do not precisely know. Many of them have courses of lectures on hygiene given to the students; we believe that in the course of these lectures a few specimens of plumbing fixtures, good and bad, are occasionally shown, and bacteriological instruction is now given in the better class of medical colleges, but no one of our medical schools has anything comparable with Pettenkofer's Institute at Munich.

It is safe to predict that there will soon be a change for the better in this respect, and that the larger and more reputable schools will find that they cannot afford to neglect this branch of study as they have done in the past. — *The Sanitary Engineer*, July 14.

THE ELIMINATION OF MERCURY.

M. F. BALZER and Mlle. A. Klumpke during the past year have made a long series of observations at the Lourcine Hospital, in Paris, on the amount and rapidity of the elimination of mercury by the urine during a treatment of long standing. (*Revue de Med.*, April 1888, and *Practitioner*, June 1888.) The condition of the mercury in the system, in whatever form it is administered, is according to some authors the bichloride held in solution by albumen or sodium chloride, or perhaps more accurately an albuminate of the oxide of mercury united with sodium chloride. Others, again, show some cause for thinking that metallic mercury in a state of extreme division is precipitated by hæmoglobin and circulates in the blood. The point cannot be considered settled. It accumulates in all tissues, but more especially in the liver and kidneys. It is eliminated almost entirely in the urine, but is also found in the saliva, sweat, fæces, and, which is an important point, the milk. There are many methods for the estimation of mercury in organic fluids; M. Balzer and Mlle. Klumpke have throughout adopted that of Witz, as modified by Souchow and Michaelowsky, which permits of the easy detection of a thousandth of a grain in an ounce. After a single dose of mercury its elimination is rapid and seems complete in twenty-four hours. If a continuous treatment is interrupted its excretion continues for some time after the interruption, and it has been found in the liver as much as a year after its administration has been stopped (Kussmaul, Gorup-Besanez). During a continuous treatment by equal daily quantities of mercurial ointment, Michaelowsky found from 1,500 analyses of the urine in seventy-four cases, that the amount eliminated gradually increased along with the length of time the treatment had been used, but became nearly constant after about a month. Souchow showed the same thing during a treatment by injections. After either treatment had been continued for some months and then been stopped, slow elimination went on for from six to nine months. It is sometimes desirable to hasten this final elimination, and potassium iodide has been thought to be of use. But this is at least doubtful, and hot air baths producing much diaphoresis have been found of more service. The amount of mercury that can be steadily eliminated for many weeks from the kidneys when the body is saturated is about a sixteenth of a grain (0.06 gramme). Less than half this quantity is excreted by the salivia; and the remainder, if there is any, passes with the intestinal excreta and may give rise to diarrhœa. The practical conclusion to be drawn from these minute researches is that it is well to stop the administration of mercury when the amount eliminated by the urine has reached its normal maximum, for neither abnormal polyuria can be counted upon to carry it off, nor is its passages by other channels likely to be innocuous.

REPORTED MORTALITY FOR THE WEEK ENDING JULY 14, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Diph. & Croup.	Whoop'g Cough.
New York	1,526,081	1037	661	42.94	9.12	34.96	4.46	1.06
Philadelphia	1,016,758	449	235	26.18	12.10	18.92	14.52	1.32
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	237	79	28.00	6.40	22.00	2.00	—
Baltimore	437,155	246	154	40.48	6.08	36.45	.81	1.22
Boston	407,024	123	45	24.30	13.77	12.15	2.43	7.29
Cincinnati	325,000	128	—	19.56	9.36	14.60	1.56	—
New Orleans	248,000	—	—	—	—	—	—	—
Buffalo	250,000	—	—	—	—	—	—	—
Washington	225,000	120	67	31.54	5.81	22.62	.78	3.12
Pittsburgh	210,000	91	52	32.70	9.81	26.16	1.09	3.27
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	35	17	28.57	17 16	25.94	—	—
Charleston	60,145	50	23	36.00	12.00	26.00	—	4.00
Portland	40,000	17	1	—	16.66	—	—	—
Worcester	76,328	25	9	20.00	16.00	12.00	—	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	22	10	27.24	—	13.62	—	9.10
Fall River	61,203	29	17	41.40	6.90	37.95	—	—
Lynn	51,407	9	3	11.11	33.33	11.11	—	—
Lawrence	40,175	—	—	—	—	—	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	15	3	26.66	20.00	13.33	—	—
Somerville	33,307	16	0	37.50	18.75	12.50	12.50	—
Holyoke	32,887	14	11	85.68	7.14	71.40	14.28	—
Salem	28,781	11	4	27.27	9.09	9.09	—	—
Chelsea	27,552	5	2	20.00	20.00	—	20.00	—
Haverhill	24,979	4	0	—	—	—	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	3	0	33.33	33.33	33.33	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	3	0	—	—	—	—	—
Malden	18,932	4	2	—	25.00	—	—	—
Fitchburg	17,534	2	1	—	—	—	—	—
Waltham	16,651	2	0	—	50.00	—	—	—
Newburyport	13,839	4	0	—	—	—	—	—
Northampton	13,419	7	3	28.56	28.56	14.28	14.28	

Deaths reported 2,708: under five years of age 1,399; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 980, consumption 263, acute lung diseases 124, diarrhœal diseases 744, diphtheria and croup 79, whooping-cough 33, typhoid fever 29, measles 24, scarlet fever 18, puerperal fever 15, cerebro-spinal meningitis 12, malarial fever 11, erysipelas eight, small-pox (Philadelphia) seven. From typhoid fever, Philadelphia 13, St. Louis four, New York three, Boston and Salem two each, Baltimore, Washington, Pittsburgh, Charleston and New Bedford one each. From measles New York 19, Philadelphia, St. Louis, Baltimore, Cincinnati, and Washington one each. From scarlet fever New York 15, Baltimore and Cambridge one each. From puerperal fever, New York eight, St. Louis five, Charleston and New Bedford one each. From cerebro-spinal meningitis, New York, St. Louis, Washington, Worcester and Somerville two each, Cincinnati and Nashville one each. From malarial fever, New York and St. Louis three each, Baltimore two, Cincinnati, Charleston and Fall River one each. From fevers, New York six, Boston and Pittsburgh one each.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending June 30th, the death-rate was 15.9. Deaths reported —— : infants under one year of age 2,864; acute diseases of the respiratory organs (London) 156; whooping-cough 85, diarrhœa 73, scarlet fever 43, diphtheria 34, measles 32, fevers 22, small-pox (Preston 11, Sheffield three, Hull one,) 15.

The death-rates ranged from 10.4 in Brighton to 27.8 in Preston: Birmingham 14.2: Blackburn 14.5; Bradford 15.0; Hull 14.7; Leeds 15.3; Leicester 15.3; Liverpool 16.1; London 15.1; Manchester 21.2; Nottingham 15.1; Sheffield 17.0; Sunderland 13.4.

In Edinburgh 16.9; Glasgow 21.7; Dublin 24.8.

The meteorological record for the week ending July 14, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, July 14, 1888.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.		8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,... 8	29.91	68.0	78.0	63.0	49.0		52.0	55.0	N.	W.	23	6	C.	F.		
Monday,.. 9	29.93	68.0	74.0	63.0	58.0		76.0	67.0	W.	S.E.	12	10	C.	O.		
Tuesday,..10	29.90	73.0	80.0	63.0	57.0		52.0	51.0	N.E.	S.E.	10	6	F.	O.		
Wednes,...11	29.67	70.0	86.0	62.0	64.0		81.0	72.0	S.W.	S.	12	16	F.	R.		
Thursday, 12	29.42	65.0	79.0	56.0	54.0		38.0	46.0	W.	W.	40	12	C.	C.		
Friday, ...13	29.68	66.0	73.0	56.0	60.0		60.0	60 0	N.W.	N.	20	9	C.	O.		
Saturday,.14	29.96	71.0	82.0	59.0	52.0		57.0	54.0	N.	S.	6	10	C.	O.		
Mean, the Week.	29.61		75.	60.				.56								

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 21, 1888, TO JULY 27, 1888.

McPARLIN, THOMAS H., surgeon United States Army. Leave of absence extended one month. Paragraph 10, S. O. 160, Department of the Platte.

WOLVERTON, WILLIAM D., surgeon United States Army. Leave of absence extended twenty days. S. O. 142, Headquarters Division of the Atlantic.

CORSON, JOSEPH K., assistant surgeon United States Army. Leave of absence for one month with permission to apply for an extension of one month. S. O. 78, Headquarters Department of the Columbia, Vancouver Barracks, W. T., July 13, 1888.

DAVIS, WILLIAM B., captain and assistant surgeon United States Army. Will proceed to Fort Niagara, N. Y., for the purpose of completing his target practice for this year with Co. C, 23d Infantry. Upon completion of this duty Capt. Davis will return to Fort Porter, New York. S. O. 145, Headquarters Division of the Atlantic, Governor's Island, New York City, July 17, 1888.

WOOD, LEONARD, first lieutenant and assistant surgeon United States Army, is relieved from duty at Fort Huachuca, Ariz. T., to take effect at the expiration of his present leave of absence, and will report to the commanding officer at Fort McDowell, Ariz. T., Paragraph 14, S. O. 162, A. G. O., July 14, 1888.

APPOINTMENT. HARVARD UNIVERSITY.

The appointment of Dr. T. M. Rotch as Assistant Professor of Children's Diseases was inadvertently omitted from the list of appointments published a few weeks ago.

ERRATUM.

In the last JOURNAL, on page 52, first line, "in spite of a possible *removal*" should have read "in spite of a possible *renewal*."

DEATH.

Died at Uxbridge, Mass., July 19, 1888, Alonzo White Bennett, M.D., M.M.S.S., aged sixty-seven years.

BOOKS AND PAMPHLETS RECEIVED.

Biennial Report of the President of the Board of Health to the Legislature of the Hawaiian Kingdom. Session of 1888.

Fourteenth Annual Announcement of the Medical Department, University of Tennessee, Nashville Medical College. 1888.

Fifteenth Annual Report of the State Charities Aid Association to the State Board of Charities of the State of New York. December, 1887.

Conservatism in Gynæcology. By A. Reeves Jackson, A.M., M D., Professor of Gynæcology in the College of Physicians and Surgeons, Chicago. Reprint.

The Treatment of Hæmorrhoids. By Hunter P. Cooper, M. D., Atlanta, Georgia, Professor of Chemistry, Atlanta Medical College, Atlanta, Georgia. 1888.

The Early Diagnosis of Spinal Caries with remarks on Treatment. By Hunter P. Cooper, M.D., Professor of General and Medical Chemistry in the Atlanta Medical College. Reprint.

Thirteenth Annual Announcement and Catalogue of Meharry Medical Department of Central Tennessee College, Nashville, Tenn. 1887–88.

Transactions of the Medical Society of the State of West Virginia. Twenty-first Annual Session, held at Huntington, May 16 and 17, 1888.

Fever; A Clinical Study. By T. J. Maclagan, M.D. London: J. & A. Churchill. 1888.

Ptomaines and Leucomaines, or the Putrefactive and Physiological Alkaloids. By Victor C. Vaughan, Ph.D., M.D., Professor of Hygiene and Physiological Chemistry, in the University of Michigan; and Frederick G. Novy, M.S., Instructor in Hygiene and Physiological Chemistry in the University of Michigan. Philadelphia: Lea Brothers & Co. 1888.

Original Articles.

MASSACHUSETTS LUNACY LAWS.[1]

BY WALTER CHANNING, M.D.

The subject of this paper may not seem a very appropriate one to introduce at one of our meetings; but it is one which has been on my mind for several years, and I shall not feel satisfied until I have done everything in my power to at least bring it forward for discussion.

We can hardly hope in this world to find laws which will satisfy every one, as they owe their origin to human weaknesses, which require guidance and control, and the subjects of these defects do not care particularly to be guided and led, because they are incapable of managing themselves. None the less society must be maintained by rules and regulations which will be found to produce the greatest amount of good to the greatest number of persons.

More than any persons requiring laws for their protection are the insane, who especially appeal to our sympathy as a class, helpless through no voluntary transgression of social restraints, but through disease, the result of the age in which we all live and form a part. We are responsible for this disease, we ourselves may at any time succumb to it, and be thrown on the tender mercies of these very laws. Let us keep this idea then constantly in mind, and in considering the question, see if we should be willing to personally subject ourselves to the restraint and control liable to be forced upon us against our will, diseased and weakened though it may be.

As a starting-point, I wish to give it as my opinion, that our own State laws on lunacy, and those of many other States, are founded on a mistaken theory, as to the nature of insanity. This theory had its origin in the crude ideas of many years ago which regarded insanity as a loss of moral control, resulting in the free and unchecked play of the most vicious elements of human nature. The natural treatment of an insane person was in consequence similar to that which would be adapted to a person of criminal instincts, who had committed no overt act, but would be liable to commit such an act if not forcibly held in restraint. It was justifiable to confine and securely bind persons who were dangerous to society if at large. The safety of society was the first consideration. The suffering of the individual was of little importance, especially as it was due to his own wicked disposition.

During the present century, starting at its beginning and continuing to the present time, constant progress has been made, the details of which are familiar to you all, in the knowledge of insanity, and the treatment of the insane. One of the most striking tendencies in this progress has been toward the full recognition of insanity as a disease, in the pure sense of the word, and not as a moral weakness. And this simple and scientific doctrine of disease has revolutionized the intelligent treatment of insanity, and made, or is making institutions for the insane, *hospitals* instead of *prisons*.

That the public, though constantly growing more enlighted, do not yet fully comprehend the disease explanation of insanity is illustrated by the frequent details of brutal treatment of the insane at their own homes. The manner in which patients are carried to asylums is also another illustration of the same thing. Last year (1887) for instance, sixteen patients were carried to the State Asylum at Utica in restraint, which was immediately removed on admission. Sixteen patients was also admitted the same year into the State Asylum at Buffalo in restraint. Of these eleven wore hand-cuffs; three had in addition, shackles, one was brought in a muff, and one woman had her hands and feet tied with bandages. Almost any asylum could easily give deplorable details of the inhuman manner in which excited, but not dangerous patients have been treated before admission, and are brought to the institution.

But public opinion must be largely moulded by those having the direct care and treatment of the insane in their hands, and at the best can be expected to advance slowly and some distance behind its instructors.

The important and practical lesson we have been learning the last few years is — that the insane can be allowed a very large degree of liberty, and require little and probably no mechanical restraint while inmates of institutions. Unconsciously, almost, as to the influence at work to produce these results, we have rapidly increased the former and dimished the latter, until many of the tenets of ten years ago as to the asylum architecture, and management are already obsolete.

Ten years ago the rectilinear building, congregate treatment, and mechanical restraint were sacredly cherished, and strongly defended by nearly the entire body of American insane hospital authorities. Abroad they were striving after better things, and accomplishing them to some extent. In this country they were tabooed, or at least frowned upon and discountenanced.

Look at the transformation to-day! New York the head and front of conservatism in some directions in the care of the insane, not in all be it understood, is about to erect a new institution with twenty-two different buildings, many of them on the cottage plan, with congregate dining-rooms, diversified architecture, and every arrangement to carry the patient from a perfect hospital to a nearly ordinary dwelling-house.

The State Insane Asylum at Utica where for many years mechanical restraint was freely and openly applied and as openly advocated, has during the last year abolished restraint and given away the last "cribbed"!!

Certainly no more striking proofs of change and progress could be given than these.

During the ten years it will also be found that many small private institutions have been started, some of them being highly successful in every sense of the word. It is no accident that has given birth to these places. They come to fill a demand for greater freedom, more home-like surroundings, more privacy, more comfort than were formally to be found in large asylums. The improved condition of the insane required something more like the homes they had been accustomed to, and less institution-like, to fulfil the necessities of treatment.

With all these changes in the character of the insane and the consequent requirements of their treatment, it is well to examine our laws and see if the time has not arrived when they, too, may be revised with benefit. Are they not too narrow, too stringent, too inelastic? Is it necessary still to assume that the

[1] Read before the Boston Medico-Psychological Society, April 19, 1888.

managers of insane institutions are not to be trusted? Are committing physicians still to be held as corrupt and willing to aid in schemes to incarcerate insane persons in lunatic prisons? Are hospitals for the insane to be surrounded with so many safeguards, that the persons requiring their treatment must be frightened away? Is it not an outrage to make an insane hospital *difficult* of ingress? Should it not be made easy instead?

I cannot help feeling that the elaborate laws concerning insane hospitals help to keep alive the spirit of distrust at times more or less noticeable throughout the community. They constantly say to the public, "these institutions are dangerous places, they are full of temptations to lure the feeble, sick, and impoverished inside their gates, and when once within, to abuse and maltreat them."

It is always urged by the friends of these cast-iron laws, that the liberty of the person is sacred, and should only be controlled by law. This is true enough as long as the person is in his right mind, but once he loses his power of reason, he forfeits the right to use what he cannot be held to be responsible for. If he loses this controlling power by means of *disease*, no court can restore it to him. This, medical treatment alone can do. And medical knowledge only can determine when the power is lost, and when it is regained.

It is just here that the element of *trust* comes in. The sick and insane man must be absolutely *trusted* in the hands of the physician, and no court, or law must interfere to say where, or how he shall be treated, any more than if he has a fractured leg, or typhoid fever. The law may manage his property, and guard his interests, and keep any rights for him, or restore them to him, but his medical treatment it has no concern with.

We seek by our lunacy laws to do away with this element of trust, but after all they only divide the trust, or throw it into incompetent hands. Let us for a moment, for instance, consider the final order of commitment which sends the certified insane person to the asylum. This may be signed by "a judge of the supreme judicial court, or superior court, in any county where he may be, and a judge of a probate court, or of a police district, or municipal court." As we all know the majority of commitments are signed by judges of the probate court. "These judges shall see and examine the persons alleged to be insane, or state in their final order why it was not deemed necessary or advisable to do so."[2]

Now these judges often do not see the alleged insane persons; and it is not necessary for two reasons. (1) They can *trust* in the certifying physician, and (2) They know very little about insanity, and cannot be expected to judge what form of treatment the insane person may require.

The law should not have been optional, for it leaves a loop-hole open for the judge to shirk the responsibility, and further offers an opportunity for dishonest persons to so deceive the judge that he shall not deem a personal interview necessary. It is one of those laws that is more honored in its breach, than in its observance. As far as I can see there is nothing in this law which can prevent the possibility of a sane person being committed to an asylum, and the mistake would be a worse one if done with the approval of the judge, and harder to rectify.

[2] Sec. 34, Laws Massachusetts.

As a matter of fact I do not believe any respectable physician is guilty of conspiring to falsely restrain an insane person. It would be too dangerous, and risky, too easily found out, and apart from moral considerations, no man of ordinary sense would be tempted to do such a thing.

Consequently it is my opinion that as far as corrupt practice on the part of the physicians is concerned, the order of the judge could be dispensed with.

The procedure under the laws of New York for committing insane persons to insane institutions is more reasonable and practicable both from the point of view of the judge and the physician. These laws[3] specify that "no person shall be committed . . . except upon the certificate of two physicians, under oath, setting forth the insanity of such person. But no person shall be held in confinement in any such asylum for more than five days, unless within that time such certificate be approved by a judge, or justice of a Court of Records . . . and such judge, or justice *may* institute inquiry, and take proof as to any alleged lunacy before approving, or disapproving of such certificate."

It will be noticed that the function of the judge is here simply that of approval that the medical certificate is properly executed according to law. The responsibility of deciding as to the *mental condition* of the lunatic is not thrown upon him. But he has the authority to make a judicial investigation if for any reason he may think it necessary. And certainly no one would wish to take away this power from him, as his hands are the proper ones to place it in.

Contrast the Massachusetts law which places on the judge's shoulders the responsibility of saying "that the person committed is insane, and is a fit person for treatment in an insane asylum. And said judge shall see and examine the person said to be insane, or state in his final order the reason why it was not deemed necessary or advisable to do so."[4]

Even the laws of Pennsylvania of 1883 are much more reasonable in regard to commitments, than are the Massachusetts laws. The section of the laws on this subject is as follows: "No person shall be received as a patient for treatment, or for detention into any house, or place where more than one insane persons are detained for compensation without a certificate signed by at least two physicians resident in this Commonwealth, who have been actually in the practice of medicine for at least five years; both of whom shall certify that they have examined separately the person alleged to be insane, and after such examination had do verily believe that the person is insane, and that the disease is of a character, which in their opinion, requires that the person should be placed in a hospital, or other establishment where the insane are detained for care, or treatment, and that they are not nearly related by blood, or marriage to the person alleged to be insane, nor in any way connected as a medical attendant, or otherwise, with the hospital, or other establishment, in which it is proposed to place such person. The certificate above provided for shall have been made within one week of the examination of the patient, and within two weeks of the time of the admission of the patient, and shall be duly sworn to, or affirmed before a judge or magistrate of this Commonwealth, and the county where such person has been

[3] L. 1874, chap. 446, title 1, art. 1, sec. 1.
[4] Section 12.

examined who shall certify to the genuineness of the signature, and to the standing and good reports of the signer."

The next section of the Massachusetts law,[5] which provides for the physician's certificates is well enough as far as it goes, with one exception, and that is the absurd clause which specifies that neither of the certifying physicians shall be connected with any hospital, or other establishment for the treatment of the insane.

Nothing could be less necessary, or more unreasonable than this provision, and further than this, it works real injury to the lunatic, for he loses the services of asylum specialists who are certainly more competent to certify intelligently than most physicians as to his mental state.

The apparent animus of this law is to guard against the asylum physician certifying, and helping to commit a patient to an institution in which he may have an interest, but supposing he has an interest in one institution only, what possible reason can there be in preventing his signing certificates for other places? Both the English and New York and Pennsylvania laws adequately and properly cover this point. The laws of the latter State say:[6] "It shall not be lawful for any physician to certify to the insanity of any person for the purpose of committing him to an asylum of which the said physician is either the superintendent, proprietor and officer, or a regular attendant therein."

Just this should be the law. When carried further and made to include every physician connected with a lunatic asylum, it is unjustifiable from every point of view.

The New York laws contain a very good provision in regard to the physician's qualifications which might be incorporated into our own laws with advantage. This is — that his qualifications shall be certified to by a judge of any court of record. Such a provision as this is a guaranty that as far as ordinary requirements and reputation go, the certifying physician is competent. It strengthens the hands of the physician, and gives more value and weight to his certificate.

The sections of our laws, numbers 26 and 27, which relate to emergency certificates, or commitments, have never seemed to me entirely satisfactory, as they either put into motion a good deal of cumbersome machinery, or are not strictly adhered to. Their object is to bring the alleged insane person under treatment within the shortest possible time, but if literally adhered to, the attainment of this object is under some circumstances extremely difficult, if not impossible. In the first place the applicant must answer the numerous list of questions given in section 15; the physicians' certificates must be *separately made* and signed, and in addition the application must be signed by one of the selectmen of the town, or the mayor, or one of the aldermen of the city in which the person to be committed resides.

It takes time to answer the questions, and a portion of them might be easily omitted, still they can usually be answered and perhaps the time required may not be ill-spent. There is certainly no need that the physicians' certificates shall be separately made and signed. If a provision is made that both physicians have examined the patient personally, one certificate with both signatures is sufficient.

[5] Section 13.
[6] Section 2.

The most troublesome feature of all is that providing for the signing of the application. In each individual instance, of course, the official specified should be found, and he should first investigate the case before signing his name. It is often, however, no easy matter so find any of these persons, at night, in midsummer and at other odd times, out of business hours. If the law is observed to its letter, nearly, if not quite as much time will be required to make out the emergency commitment as the ordinary commitment. There is a little more red tape about the latter, but where it is regularly and systematically tied up every day, the difference is insignificant.

Then, too, the emergency commitment requires a bond to the amount of one hundred dollars, to be given by the party committing the insane person. I must say I see no reason for this section of the law. The bond is to be given to the treasurer of the asylum, or hospital, which would lead one to suppose that it was to secure payment for the board of the insane person for the five days allowed by the emergency law. But I can see no more reason why a bond providing for payment of board should be necessary in the emergency case, which is for five days only, and in the exceptional case, than in the ordinary case. If there is any other or better reason for this bond, why should it be given to the treasurer of the hospital? Is it a guaranty of good faith? If so, it is a very unusual proceeding to make money the basis of such a guaranty. The other provisions of the law should make such a guaranty unnecessary. We may further question who is going to give the bond in the case of the ordinary pauper. The law says the "person committing." Who *is* the person committing? An application is to be *signed*, but the maker is not mentioned. Is the physician? Has he any right to make both the application, and the certificates? It may be held that the signer is the applicant. The next question is, shall the signer, be he mayor, alderman, or selectman, give the bond? If he does this, additional time will be required to consider this question.

I know now that physicians often go on this bond, but it is placing an unnecessary burden on them, and one not intended by the law.

The next section to be considered is that relating to *voluntary commitments*, a recent and important addition to our laws. A similar law is now in force in Scotland, and the Commissioners in Lunacy say of it in their last report for 1886: "Forty-nine voluntary patients were admitted into asylums," (the total number of registered lunatics being 11,025). "We have for some years been able to state that nothing has occurred to indicate any difficulty or disadvantage traceable to this class of patients in asylums; and we continue to be of opinion that this is a useful provision of the law which permits persons who desire to place themselves under care in an asylum to do so in a way which is not attended with troublesome forms, but which, nevertheless, affords sufficient guarantee against abuse."

I am glad to see this testimony in favor of the Scotch law, though the number of voluntary commitments is small. I have not at hand the Scotch law and do not know whether it is essentially like our own.

Perhaps evidence from our own hospitals and asylums would be somewhat similar. But the whole number of voluntary commitments is small, which may mean that the institutions do not generally favor

them, or that few persons among the public understand, or care to avail themselves of the law.

We find from the Report of the Board of Lunacy and Charity, for 1887, that during the six years the voluntary commitment act has been in operation, only two hundred and sixty persons have availed themselves of it, and most of these have gone to the McLean Asylum. During these six years the whole number of commitments from the general community was eighty-five hundred, and the number of voluntary commitments was scarcely four per cent. of the whole number. During the year 1887 there was less than fifty voluntary commitments, thirty of these being to the McLean Asylum. The balance was scattered about among the public lunatic hospitals. At Danvers there were but three voluntary commitments in 1887, which seems a very small number out of so large a total number of admissions, four hundred and forty-six in all. The deduction from this fact might seem to be that among the poorer classes in the community there are none, or nearly none of those persons "whose mental condition is not such as to render it legal to grant a certificate of insanity." Otherwise how can we explain the large number of voluntary admissions at the McLean Asylum, twenty-nine persons out of a total of seventy-four persons?

There is undoubtedly another explanation, which is something like this: The ignorance of the lower classes is always an obstacle in the way of early treatment, and the poverty of the middle classes, or those persons a grade above the lower classes, prevents them from seeking those surroundings which would be agreeable to them while still retaining their reason. Both of these classes, when once unable to care for themselves, must be sent away to those institutions provided to take them at the lowest cost. It is no longer a voluntary question with them, or their friends, but rather a necessity, and this settles the question of commitment.

With the upper classes the question is the exact opposite. They can be influenced at an earlier period in their disease to seek treatment and they further have the requisite means to pay for surroundings in keeping with those at home, to which they are willing to go, and their friends are willing to send them, at an early period.

I suppose the provision laid down in section 28 of the law is, however, rarely adhered to as to whether the mental condition of the alleged insane person is "not such as to render it legal to grant a certificate of insanity." If the person is undoubtedly insane, then the institution has no legal right to admit him, no matter how willing he may be to voluntarily commit himself, but as far as my observation goes, the admission has usually turned on the latter point. We all know that many insane persons are quite able to sign voluntary agreements, but no such person can be admitted under the law. If the mental condition of the person is obvious, then of course a certificate can be made out, and he must be committed in the ordinary manner.

The voluntary law from its language, is intended for the *sane* and not for the *insane*, and should not be used to commit the latter. Of what use otherwise are complicated lunacy laws, if persons deprived of the natural use of their ordinary reasoning and will power can shut themselves up in insane asylums under the pressure usually of their friends and relatives? And further, supposing the voluntary patient becomes violently insane, what is his legal status then in the asylum? If he entered the institution of his own accord, in a semi-insane condition, he certainly passes when violently insane into a perfectly defenseless condition, and could under no circumstances more need any protection the law may grant than at such a time. Is he still to be regarded as a voluntary inmate, able to leave after three day's notice? This is manifestly absurd, and leads to the inevitable conclusion that if the voluntary patient admitted sane, becomes insane, he should be regularly committed.

Section 29 provides for immediate notice to the Board of Lunacy and Charity of the voluntary admissio ns, and the Board is required to immediately investigate such cases. What this investigation may be, I do not know, but it should be made at once by a medical man capable of judging of the various degrees of mental disease, and the Board of Lunacy and Charity should from time to time make a special examination of the voluntary cases. In my opinion there should be some legal provision whereby the person desiring to enter an insane asylum voluntarily, may so commit himself independently of the asylum authorities. For instance, one or two physicians should certify to his mental disease partial or developed, and to the asylum being an appropriate place for his treatment. This certificate then to be approved by a judge of probate, or some other official.

As the insane asylum is primarily, and strictly should be for the insane alone, the sane should be excluded, rather than invited to seek its treatment, but cases of partially-developed disease for the time practically insane, should gain easy admittance. The certificates of one or more physicians need only certify to the facts, and to the desirability of treatment. The approval of a judge would be the only bit of red tape, which could be easily managed, and the voluntary cases would then be placed on record and have some legal standing.

The small private institutions are at present discriminated *against* so far as the voluntary law is concerned. The law says (sec. 26), "The superintendent, or keeper of any lunatic hospital, . . . may receive into his custody, etc." It has been held by the Board of Lunacy and Charity that the small private institutions were not included in the meaning of this law. Such may, or may not be the correct interpretation of the law, the Board has, at any rate, the power to enforce this interpretation, and we now find that no small places receive voluntary cases.

As they, more than any other institutions are especially adapted to receive just such cases, there is manifest injustice somewhere. If they are not properly organized and managed, they should be brought up to the requisite standard. If the law is not full enough to take them in, it should be enlarged.

There are probably defects in both these directions in consequence of the possibility of which the Board ruled against them. The remedy is to include them clearly in the law admitting voluntary cases, and then to provide for adequate supervision. The latter is both necessary and just, as they have no trustees, are proprietary, and are growing steadily in number.

Another unnecessary provision in our law is section 30, which provides that "Any physician who wilfully conspires with any person unlawfully, or improperly to commit to any lunatic hospital, or asylum . . . any person who is not insane, shall be punished by fine, or

imprisonment at the discretion of the court." This section may have been suggested by the English law, 16 and 17 Victoria, chap. 96, sec. 13, which says, "Any physician, surgeon or apothecary, who shall sign any certificate, or do any other act (not declared to be a misdemeanor), contrary to any of the provisions herein contained, shall for every offence forfeit a sum not exceeding twenty pounds."

It must be remembered that the history of institutions for lunatics in England is entirely unlike that in this country. The English laws have been made from time to time to meet the special requirements of the circumstances, and often stringent laws were at the time necessary.

With us the case is different. Our lunatic asylums are well-managed. The public has confidence in them, and is satisfied with them. The small private asylums are strictly medical in character, and up to the present time have received few patients.

We do not require stringent laws to regulate admissions, but rather the doors of lunatic asylums should be easily opened to encourage early treatment. Neither do we require elaborate laws regulating the care and treatment of the patients while in the asylum. The mismanagement and abuse formerly somewhat prevalent in the English proprietary asylums are hardly possible in this country.

What we do need, however, is careful *medical* supervision of our whole system of provision for the insane. Every year this need becomes more apparent and urgent. A *medical* commissioner in lunacy, of ability and experience, is the person to whom this work should be confided. No other person, however competent, would in my opinion, be able to satisfactorily supervise the details of work, which must never be allowed to lose its medical character.

In Massachusetts the institutions for the insane are so compact that they can be easily visited, and the details of a practical system could be put into operation somewhat after the manner of New York. But here the result would be of a very different character; for while no one man can efficiently supervise the system of provision for the insane covering such an immense territory as in New York, here, one man could do it thoroughly.

The theory under which the New York commissioner in lunacy acts is excellent, but he is expected to do the work of three men, as a consequence of which his work loses very much in value, and the theory is never carried into practice as far as it should be.

I have merely outlined a few of the defects of our Massachusetts lunacy-laws. There are others which might be referred to perhaps rather as *blemishes* than *defects*. Our laws are in many ways excellent, and have worked pretty well, partly, I fear, because they have not been strictly followed. They would have been less satisfactory if followed to the letter. The time is coming, however, when some revision of these laws will be necessary, both for the purpose of improving on those in existence, and adding on others to cover the need of medical supervision, the wisdom of which I think no one will question.

The time for this revision may not have arrived as yet; but thinking that it is not far off, I have prepared this paper for the purpose of introducing a discussion on the three following points:

(1) Do our Massachusetts lunacy laws need revising?

(2) Has the time arrived for this revision?

(3) Shall a committee of this Society be appointed to prepare a revision of the existing laws, and a draft of new laws establishing a medical State commissioner in lunacy, to serve as the basis of future legislation?

KATALYTIC ACTION OF ELECTRICITY; ITS PRACTICAL VALUE IN RHEUMATIC AFFECTIONS.

BY G. L. WALTON, M.D.,
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It has been long recognized that the effect of the electrical current on animal tissues comprises something more than the stimulation of nerves and muscles. Remak first called attention to the alteration produced in living tissues by the passage of the galvanic current, and applied the name "katalytic" to this function. Experiment has shown also that fluids may be made to pass into the body by means of special electrodes adapted to the purpose, a property of the electrical current which has been termed its "kataphoric" action. Whether the latter is an element in the production of the katalytic action, or whether vaso-motor changes, improved nutrition by stimulation of the trophic mechanism, increased tissue-metamorphosis, osmosis, or molecular changes, each or all, are important factors, cannot as yet be accurately determined; the conditions are too complicated for satisfactory experiment and analysis. The practical bearing of the question lies in the fact that therapeutic experiment has demonstrated beyond a doubt that such changes may be produced in the tissues as to cause improvement and even recovery in certain disorders not yielding to other treatment. Prominent among these disorders are subacute changes in or about the joints, of rheumatic origin.

Erb [1] quotes the observations of Remak, Rosenthal, Meyer, Cahen, Cheron, Weisflog, Benedikt, Onimus, Legros and Erdmann, as well as citing his own personal experience, to illustrate the practical benefit of electricity as a therapeutic agent in various forms of arthritis, including acute and chronic rheumatic and traumatic affections. It appears proved that exudation and pain may be made to disappear, and the normal mobility of the joints restored, in cases where other remedies have failed. Rosenthal and Bernhardt [2] allude to the effects of the galvanic current on rheumatic affections of muscles and joints, choosing the subacute and monarticular joint affections as the most promising objects of experiment. They recommend especially the galvanic current, considering faradism also valuable as a counter-irritant, as well as faradization of neighboring muscles. They state that even in acute rheumatism the faradic current and the wire brush have been found to lessen pain and shorten the disease, but throw doubt on its supplanting salicylic acid and other remedies. They allude to the passage of galvanism or faradism as promoting absorption of joint exudation and lessening the pathological processes in the neighborhood of the joint (fasciæ, tendons, periosteum and muscles). Beard and Rockwell [3]

[1] Handbuch der Elektrotherapie. Leipzig, 1882, p. 251.
[2] Elektrizitätslehre für Mediziner und Elektrotherapie. Berlin, 1884, p. 439.
[3] Practical Treatise on the Medical and Surgical uses of Electricity. New York, 1878, p. 541.

state that electricity has been employed with more or less success in rheumatism from the early periods of the history of electrotherapeutics, and add that this is the disorder against which (next to paralysis), the original experiments of electrotherapeuticians were most frequently directed. They lay stress on the importance of the *general* application of electricity, inasmuch as the disease is constitutional, and recommend general faradization quite as strongly as local application. They find subacute and acute cases far more amenable to treatment than chronic. For the local treatment galvanism and faradism are recommended alternately. The general application is said to increase the flow of urine, to cause generally more or less exhilaration, and to relieve pain; the local application relieves pain, reduces inflammation, and when effusion has taken place, causes absorption; the latter being affected by both currents, in some cases more powerfully by the galvanic. The caution is added that if the currents are used too strong or too long, the pain and inflammation may be increased. In the cases quoted by these authors, general faradization seems to have been the chief agent, although in one case the application was made with special reference to the diseased parts. In myalgia, or muscular rheumatism (characterized by pain on movement diffused through the muscles, and caused usually by exposure to cold and dampness), local faradization with the mild current either stabile or labile, usually causes relief in a short time. Stabile galvanism may relieve at once; severe applications may increase the pain. They add: "Of the large number of cases that we have treated, nearly all have been relieved by one, two, or more applications. A single application with a mild current, prolonged for one or more hours, may sometimes dissipate an attack of myalgia." In one of the two cases cited, general faradization was used in a case of several years' standing, cure resulting in three weeks. In another case, muscular rheumatism existing in the hips and limbs for a month, recovered in a fortnight under daily faradization of the affected parts. Duchenne[4] reports cases of muscular rheumatism, rheumatic paralysis, and rheumatic contracture, cured by the use of faradism.

Other authorities could be cited to confirm these observations, but enough have been mentioned to show that the subject is one which has attracted universal attention among electrotherapeuticians from the first. It seems, therefore, somewhat remarkable that the profession in general have made so little of this branch of electrotherapeutics, even while the application of electricity has been greatly in vogue for all forms of paralysis, for which it has for a long time been applied indiscriminately, sometimes in accordance with, but oftener in defiance of scientific principles. The experience of the writer has been most satisfactory in the treatment both of muscular and articular rheumatism; successful results have followed, almost without exception, in the cases where it has been tried; a careful selection of subjects having contributed largely to this result. Long standing, chronic cases, such as deforming arthritis, have not been operated upon, for in no such case has the prospect of recovery seemed sufficient to warrant the trial. Cases of acute rheumatism, again, have hardly seemed to me appropriate subjects for this form of treatment, in which opinion I coincide fully with Rosenthal and Bernhardt, quoted above. Indeed, far from electricity replacing internal remedies in the treatment of acute rheumatism, it is to be feared that more harm than good would be brought about by its use.

[4] De l'électrisation Localisés, p. 883.

The cases selected have been limited to subacute, monarticular rheumatism, to muscular rheumatism of not too long standing, and to allied conditions. In every case the electricity has been applied locally. I would not underrate the value of general faradization for cases of general debility resulting either from persistent rheumatism or from other causes. I do not, however, feel convinced that the root of the disease, as such, is directly attacked by general faradization as implied by Beard and Rockwell. My experience leads me to emphatically endorse the caution of Beard and Rockwell regarding excessive length and strength of application, especially in acute cases. A medical friend, suffering from subacute rheumatism, having found the faradic current extremely efficacious in reducing the swelling of the finger-joints, gave himself a sitting of forty-five minutes with a strong current, and produced thereby a decided accession of pain, stiffness and swelling. In one case of muscular rheumatism, again, quite acute, the galvanic current was given by my advice, and ten cells of the chloride of silver battery, applied ten minutes, aggravated the trouble so greatly as to cause its discontinuance. The exact amount of electricity received in the case cannot be accurately determined, since no galvanometer was used. The following will serve as illustrations of more favorable cases.

Case I. J. R., janitor, thirty years of age, treated in conjunction with Dr. W. J. Otis. Two months previous to the commencement of treatment, had rheumatic fever with pain and swelling, involving principally the right fingers and wrist, the right shoulder and ankle being also affected. The symptoms rapidly disappeared, excepting in the right wrist, where considerable pain, and marked swelling and stiffness persisted.

Examination shows the wrist red and swollen: it can be flexed fairly well, but neither extended nor adducted without great pain, and not to a great degree even with pain. He cannot double the fist, nor approach the thumb to the little finger: flexion of the fingers, both active and passive, is impossible, and spreading of the fingers is difficult. The grasp with the dynamometer is zero. Massage is painful. The muscles of the extensor group are wasted, — the right forearm measuring 9 inches, the left 10½ inches; the right wrist measuring 7½ inches, the left 7⅛ inches. The reaction of the extensor muscles, both to the galvanic and faradic currents, is decidedly lessened in degree, though not altered in quality (that is, no degeneration reaction). Lead-poisoning, poliomyelitis and neuritis were carefully eliminated.

Treatment. — A moderate galvanic current passed through the wrist and fingers (medium-sized electrodes of metal covered with chamois-leather); faradism and galvanism to the muscles. The electrodes were placed opposite each other, at different points about the wrist, and held quietly, so as to allow the current to pass directly through, the current being occasionally reversed. Each sitting lasted about twenty minutes, and was repeated daily.

Improvement was apparent after the first sitting. On the third day the patient could flex the fingers, and reach the last phalanx of the little finger with the

thumb: slight adduction of the wrist was possible, and the grasp was improved. At the end of the first week the dynamometer registered six: there was no pain on movement, little on massage. At the end of the second week the dynamometer registered ten; there was no pain on movement or massage; the fingers were easily spread, and the thumb could be approximated to the base of the little finger; adduction fair; extension possible to the straight line; swelling lessening, and forearm increasing in size. A splint was applied to assist extension. At the end of the third week the right forearm had increased from 9 to 9⅜ inches, and the right wrist had decreased from 7½ to 7¼ inches; the dynamometer registered fifteen. At the end of the fifth week no swelling was perceptible at the wrist; all movements of the wrist and fingers were free, excepting a very slight restriction in extension; the grasp was good, although the fist could not be clenched quite as firmly on the right as on the left. Treatment discontinued.

CASE II, kindly referred to me by Dr. J. R. Chadwick. A prominent lawyer, beyond middle age, a rather heavy man, had suffered during the previous winter from a severe attack of sciatica, which entirely disabled him, and required the use of opiates. This wore off, and by spring he was able to get about easily. Early in the summer the ankles began to show a tendency to swell, more especially the left. The trouble increased until it caused the patient considerable annoyance. The swelling was unaccompanied by noticeable pain or redness, but was increased by exercise, being particularly marked at night.

Treatment was commenced in the middle of October, no promise of benefit being held out. The faradic current (every other day) was first applied, and the result was so gratifying that this form of electricity was used throughout. The swelling could be seen to lessen, and the movements of the feet to become more free during each application. The return of the swelling between the applications became gradually less marked, and in two months and a half the ankle was virtually normal, and the treatment was discontinued. Recurrence of the trouble one month later caused the treatment to be recommenced, with similar result, two weeks proving sufficient for recovery. During the two years succeeding there have been occasional intervals of moderate swelling, accompanied by slight pain and stiffness, not sufficiently marked to require treatment. There has been, also, one attack of sciatica.

I have treated a number of cases of muscular rheumatism, notably of the neck and back, with results coinciding with those of Beard and Rockwell and other writers. No case, however, offers sufficiently marked or unusual characteristics to justify especial mention. The rapidity with which pain and stiffness sometimes disappear under the treatment certainly warrants the assumption that the current produces some definite change in the tissues, and acts as something more than a stimulant to nerves and muscles. It seems not improbable that here, too, we have to do with the absorption of a moderate degree of exudation. Cases of the ordinary form of stiff neck from exposure to cold have shown marked results from the use of galvanism to the affected side and faradism to the opposing muscles.

Swelling of the ankles like that seen in the second case quoted above is not an uncommon symptom in corpulent people, without cardiac or renal troubles, and even without the rheumatic tendency evident in his case. In several cases of this nature, as well as in the troublesome cases of pain in the heels and soles of the feet caused by overuse, and which can hardly be classed either under rheumatism or neuritis, but which tax severely the patience of both physician and sufferer, I have been surprised at the degree of benefit obtained from the use of electricity, and in place of suggesting it as a last resort have become encouraged to recommend it in many of these cases with considerable confidence. In this class of cases the faradic seems fully as efficacious as the galvanic current, the explanation of which it would be premature to attempt in the present unsettled state of our knowledge regarding the effect of either current upon the organism. The thought would suggest itself, however, that counter-irritation and the modification of the superficial circulation play a great part in the cures effected by faradism, in contradistinction to the katalytic action of galvanism. Further investigation is desirable to aid in the classification of cases, and to permit more definite indications for the choice of currents, the object of this paper being rather to emphasize the practical advantages to be gained by this form of treatment than to discuss the theory of its action.

REPORT ON FOOD AND DRUGS, THEIR SOPHISTICATION AND ANALYSES.

BY B. F. DAVENPORT, M.D.

FRANCO-SWISS MILK FOOD.[1]

COMPOSITION.

Water	4.16 per cent.
Fats	1.94 "
Milk sugar and grape sugar	9.70 "
Cane sugar	84.62 "
Starch	33.02 "
Soluble carbo-hydrates	46.85 "
Ash	1.43 "

Its agreeable flavor resembling cake is due to the milk solids, and the mode of preparing the cracker before powdering.

LŒFLUND'S CREAM EMULSION.[1]

COMPOSITION.

Water	24.32 per cent.
Fats	15.32 "
Soluble albuminoids	2.24 "
Insoluble "	4.99 "
Maltose and lactose	43.16 "
Dextrine	6.27 "
Ash	2.60 "

Similar in appearance, smell and taste to butter-taffy, the advertised analysis agrees reasonably well with the above, which is unusual for any proprietary food. But what is more remarkable it has over twice as much butter fat as is claimed for it, while usually such preparations contain less than a fair whole milk would naturally yield. It does not dissolve readily in water, white curds separating and coming to the top. It is much too sweet to resemble cow's milk. Such an excess of saccharine matter is highly objectionable.

WELLS AND RICHARDSON'S LACTATED FOOD.[1]

The name of this food conveys a false impression for it does not contain any milk.

The claim that it contains fifteen per cent. of malt diastase, retaining its full activity, is not sustained by the analysis, where no diastasic action upon the over

[1] Report of N. J. State Dairy Commissioners for 1887.

one-third part starch was found when the food was brought into solution. In the presence of so large an excess of alkali no such action is to be expected. Its albuminoids are derived from the gluten, etc., of the cereal, and not from milk.

COMPOSITION.

	As advertised.	As found.
Water	....	7.76 per ct.
Fat	....	1.64 "
Milk-sugar	25.00 per ct.	29.65 "
Malto-diastase	15.00 "	.... "
Soluble carbo-hydrates	41.67 "	39.00 "
Starch	.... "	36.43 "
Gluten and soluble albuminoids	16.35 "	.... "
Albuminoids	.... "	11.85 "
Potassium bicarbonate	1.25 "	.... "
Phosphates	0.25 "	.... "
Sodium chloride and other salts	0.48 "	.... "
Ash	.... "	2.61 "
	100.00	

MALTED MILK.[2]

COMPOSITION.

Water	2.18 per cent.
Fat	5.30 "
Albuminoid	16.88 "
Soluble carbo-hydrates	66.99 "
Starch	5.57 "
Malt-sugar and milk-sugar	50.40 "
Ash	3.13 "

This food differs from Nestle's and others like it in that most of the starch has been converted by malt diastase into maltose. The malt extract in the food as sold, has no diastatic activity. The claim that the caseine has been predigested by the diastase, that is converted into a soluble form, is not found to be true. The caseine in the "Malted Milk," is present with its properties no more changed than thay are in Nestle's, the Anglo-Swiss, Carnrick's Soluble Food, or other similar milk foods, prepared by evaporating down baked wheat powder with condensed milk. In all of these it is left behind as separate, hard, unchanged particles of caseine.

REED AND CARNRICK'S LIQUID PEPTONOIDS.[2]

COMPOSITION.

Water	64.694 per cent.
Alcohol	15.136 "
Albuminoids	2.021 "
Fat	0.031 "
Carbo-hydrates, mostly sugars	17.666 "
Ash	0.350 "

This claims to be "concentrated beef and milk with gluten perfectly digested." It is a strongly alcoholic liquid of a light yellow color, with an alcoholic burning taste, and with a smell similar to that of many preparations of hair oil. It appears that the insidious introduction into the bed-room of an invalid, of a preparation claiming, as this does, to be of a highly nutritious character, and yet which is principally composed of alcohol, is a criminal act. There is nothing on the label to make him suppose that he is drinking something which is almost entirely sweetened alcohol. In communities where the sale of spirituous liquor is prohibited, this liquid peptonoids could supply in secret, a morning dram to every toper, under the guise of medicine.

RHUBARB.[3]

Chinese rhubarb may, according to Dr. Boni, be distinguished from the European by the amount of lime occurring in the ash. The former yields 20 to 25% ash, while the latter 8 to 9%. This difference being due to the amounts of calcium oxalate which they contained.

[2] Report of N. J. State Dairy Commissioners for 1887.
[3] Pharm. Post, Jan. 22, p. 51.

UNFERMENTED WINES.[4]

Mr. Millard reports on his examination of unfermented wines sold for sacramental purposes as free from alcohol, that where he found the alcohol absent, some preservative, such as salicylic acid was present. None of these were genuine, but rather merely acidulated and colored syrups. Cochineal or some other coloring was present in all.

PEPPER.[5]

Of late years, grain of paradise has become a frequent form of adulteration in powdered pepper. This may be detected not only with the aid of the microscope, but also from the presence of tannin which is not to be found in the genuine pepper. The powder treated with a mixture of alcohol and ether yields the tannin, which is shown by its reaction with tincture chloride of iron.

SWEET WINES.[6]

Considering the extensive use of such for medicinal purposes, the results of the analysis of American samples by the United States Agricultural Department, are of interest to physicians. They were, that but little of the pure juice of the grape entered into their composition, but that they were chiefly composed of alcohol, sugar and water, and partook more of the nature of a liquor than of a natural wine. The samples were of California, Sherry, Port, Burgundy, Muscatel and Angelica.

COGNAC PRODUCTION AND TRADE OF FRANCE.[7]

According to "Weinlaube," France yearly exports about 300,000 hectolitres of alcohol, while it imports 200,000 to 330,000. There is distilled from wine about 20,000 to 25,000 hectolitres of cognac, and about 6,000 more is imported, making altogether 26,000 to 31,000. There is, however, 150,000 to 160,000 hectolitres of so-called cognac exported annually, over 100,000, to England alone. One can judge from these figures what an immense quantity of artificial brandy is exported annually from France under the name of cognac.

PRIZE FOR THE DETECTION OF ADULTERATION.[8]

The Minister of Commerce in France has informed the Academy of Science that he is authorized to offer a prize of 50,000 francs to any one for the discovery of a simple and useful instrument for the detection of adulterations in wine and spirits.

CHAMPAGNE ADULTERATIONS.[9]

The perfection of adulteration is shown in the following circular sent out by a German wine dealer. "Our very large trade in champagne, enables us to offer you our cheap quality of champagne at 15,60 francs per dozen, inclusive of packing and shipping by way of Rotterdam or Antwerp. We wish to call your attention that we leave to you the selection of any labeling you desire, and beg that you allow us to send you a sample"— to leave thus to the purchaser the selection of the label, is to attain to the inimitable.

[4] Pharm. Journ. and Trans., April, 1888.
[5] Journ. der Pharm., Elass-Lothig, 1888.
[6] U. S. Agricultural Department Bulletin, No. 13, part iii, p. 368.
[7] Zeitschrift f. Nahrungs-untersuch, and Hygiene, Mai, 1888.
[8] Revue Internationale des falsification des Denices Aliment, Mai, 1888.
[9] Revue Intern, des falsification, etc., Mai, 1888.

THE NATIONAL FORMULARY.

A collection of unofficinal preparations issued by authority of the American Pharmaceutical Association, 1888. This work is intended to include the more important of the large number of medicinal preparations which are more or less frequently prescribed by physicians, or demanded by the public, but which are not recognized in the United States Pharmacopœia, either because they were not deemed by the revisers to be of sufficient importance to be included in this official work or because they originated subsequently to the appearance of that work, or for other reasons. Owing to the absence of an authoritative standard, many of these unofficial preparations have been, and are being made after different formulæ, and in varying strength, so that pharmacists, particularly in the larger cities, are compelled to procure and keep on hand a variety of brands of what is intended to be one and the same preparation, to satisfy the demands of their patrons, professional or otherwise. In compiling the work, the needs of all sections of our country have been consulted. The list even includes a small number of formulæ in imitation of some of the popular nostrums of the present day, but constructed on rational principles for uniform composition and reliable effect, rather than for mere external appearance and taste. It is hoped that these will be used as directed to be used in place of the proprietary articles, the composition of which is generally kept secret.

As the mission the work is to fulfil can only be properly accomplished by the coöperation of the physicians, it is of the greatest importance that they make themselves acquainted with its object and contents, and that then they will consent to accept the preparations made in accordance with the formulæ contained in it, instead of designating any special maker's product.

The list of formulæ given in the work numbers 435, and includes 86 elixirs, 54 extracts, 41 liquors, 19 mixtures, 21 pills, 35 syrups, 33 tinctures, and 12 wines, besides the many lesser groups, and single members. In constructing the formulæ of the compound preparations, it has been endeavored to make them as independent from each other as possible, so that only a comparative small number of what may be called basic preparations are needed. If these, numbering about a dozen, are kept in stock by the apothecary in reasonable quantities, most of the compound preparations contained in the formulary may be prepared in a short time.

Clinical Memorandum.

HALLUCINATIONS OF HEARING.

BY J. ALBAN KITE, M.D., NANTUCKET, MASS.

A CASE recently came under my care, presenting hallucinations so peculiar as to warrant their being recorded. Mr. E., the subject, is over eighty years of age, and, with the exception of deafness has retained his faculties to a remarkable extent (deafness $\frac{1}{4\,0}$). Until the last few years he has lead an active public life. Has been temperate in all things save mental activity. A few days prior to my seeing him, he was one evening startled by a loud rapping on the window. He arose to ascertain the cause, when the sound was repeated on the opposite window, and followed by a shrill, derisive laugh. His wife, on being questioned, assured him there had been no noise. On returning, the same performance was repeated, save that there were two actors, a deep bass voice having come upon the scene, and a lively discussion was carried on between the two. The fourth night two female characters, or rather voices, presented themselves. The various events of the day were discussed in which all seemed to take a lively interest; but what seemed strange, their conversation was flavored with such laxity of speech, that Mr. E., although assured the condition was purely subjective, felt very uncomfortable with his wife sitting beside him.

These debates lasted for several evenings, and interested Mr. E. not a little. About 9 P. M., they adjourned, and did not again appear until the next evening, when reinforced by other members of the same troupe, they announced their presence by singing "Home, Sweet Home," without an error. This was followed by several solos; and the concert was kept up until after midnight. The number of these little creatures of his imagination increased from day to day as did the variety of their antics. They visited him in daylight; followed him in his walks; called to him from doorsteps, windows, and from behind trees.

Mr. E. never saw these creatures, but knew each by his or her voice. Those who first appeared never failed to pay him a visit during the day. Not one, however, assumed the voice of a friend. Under what, I trust, was appropriate treatment, although the number of voices remained the same, they had less and less to say, and more time elapsed between the visits, until I think the sixth day of treatment, all met in the evening, and after a quiet and peaceable gathering, dispersed, their exit being accompanied by a drum-corps: the latter, in Mr. E.'s own words, "seemed to beat a retreat."

Three weeks have elapsed with no return.

Mr. E. is perfectly sane. Has, so far as I have ascertained, no organic disease, save a slight cardiac valvular insufficiency, and the deafness which is due to lesions in both internal ears. He is in the best of spirits, but occasionally suffers from epistaxis, and, at night finds his ankle slightly swollen. Whether these hallucinations are the resultant of abnormal cerebral circulation and of irritation of already diseased aural ganglia or sensory nerves, I am ignorant. The treatment was with the bromides. Mr. E. has told me the substance if not the exact words, of conversations he has had with Daniel Webster, and can give last week's stock quotations as accurately as any financier. His opinion is often asked on various subjects, and results have shown his good judgment. I know of no one whose calm reasonableness is more to be depended upon, nor have I seen this latter condition departed from.

Reports of Societies.

BOSTON MEDICO-PSYCHOLOGICAL SOCIETY.

PHILIP COOMBS KNAPP, M.D., SECRETARY.

APRIL 19, 1888. DR. C. F. FOLSOM in the chair.

DR. WALTER CHANNING read a paper

MASSACHUSETTS LUNACY LAWS.[1]

DR. GEORGE F. JELLY said that he saw as much of the workings of the present lunacy laws as any mem-

[1] See page 97 of the Journal.

ber of the society, and he admitted that the laws had their defects. Commitment by the judge was less objectionable than if the judge had to see every case. He thought that that provision of the law protected the physician and the asylum superintendent, and that it was better that the judge should have the right to use his own discretion in the matter of seeing the patient, as thus there was less likelihood of abuse. Outside of Boston the judge sees most of the cases, but in Boston he sees only one-third to one-half. In some ways the New York laws are better, but while this provision is discretionary there is no special objection to it. The emergency law was probably intended to apply to those cases where no judge could be found, and it is a question whether it is legal to commit patients under it when the judge is accessible. He regarded the bond as a penalty, to be forfeited if the five-days' provision was not complied with.

DR. CHANNING said that the wording of the law was obscure on this point.

DR. JELLY said that in emergency commitments he signed the bond himself, regarding it as a penalty, and he thought that the physician could sign it. The clause requiring the signature of the mayor, alderman, or selectman, to an emergency application was too severe, but it was evaded in Boston by giving the Board of Public Institutions power to sign it by their clerk, who signed blank applications ahead for emergency use. These were accepted as legal by the Board of Lunacy and Charity. He thought that in ordinary commitments some judicial approval should be required, but there was no great danger of harm. It was unjust that no man connected with an asylum could sign. The reason why the public asylums have so few voluntary patients was not because patients refused to go on that basis, but because, in pauper cases, the towns objected to paying for board unless the patients were legally committed. He did not use to think that a lunacy commission was necessary, but he had now come to regard it as very important; a commissioner would revise the laws and report as to the necessity for changes.

DR. GEORGE T. TUTTLE said that he had supposed that the law intended that the judge should see every case, but that discretion was allowed in case it were likely to be injurious to the patient to have the judge see him. The judges who commit the fewest patients hold most strictly to the law. As papers from physicians out of the State are worthless, a number of the patients at the McLean Asylum have to be recommitted after they are brought there, so the judge holds court at the Asylum. If a patient is once there, however, the judge never has any scruples about committing him. The judge is very strict about not permitting any employee of the asylum to sign the application in such cases, but the signature of a saloon-keeper in Somerville will be accepted without question. He cited several absurd and questionable methods in which the emergency law was stretched in particular cases. He felt a security in commitment by a judge, and he regarded it as a protection to the asylum, especially in the case of a private asylum like the McLean. He liked the idea of regarding an asylum as a hospital and not as a prison. He agreed with Dr. Channing in regard to voluntary patients. They got many voluntary patients at Somerville, but only by a most liberal interpretation of the law. Many of these cases could be legally committed, so that their admission on a voluntary basis is illegal. Before the patient signs the request, Dr. Tuttle always explains to him the workings of the law, pointing out that the three-days' notice is merely to give time for a legal commitment, so that, if he gives notice of a desire to leave before it is advisable, he will be legally committed and be obliged to stay. If the patient knows this it often settles the matter, and the subject of leaving is never broached. Patients who know that an attack of acute mania is impending often came in as voluntary patients, to be cared for during their attack, which is also illegal. The Board of Lunacy and Charity are notified when a voluntary patient is received, but they do not investigate for some time. They may read the statement sent with the notice, but they never make any medical investigation. The voluntary basis is a good one for the patient, but the letter of the law is not strictly followed.

DR. J. H. DENNY commended the appointment of a lunacy commission most heartily, especially with reference to the importance of its having the responsibility devolved upon it, of making the initial inquiries and determining what should be done, in cases reported to it, where no one is willing, or in position to take the requisite steps. In this way the numerous homicides due to insanity might be checked, in all probability, as to frequency, if some central authority should assume the responsibility that individuals shrink from in making due inquiry and taking prompt action.

DR. T. W. FISHER said that the laws in the different States varied greatly, from a jury trial in every case in Illinois to the unsworn certificate of two physicians in Rhode Island. He gave an instance of the laxity of laws in the latter State, in a case which occurred in his own practice. The Massachusetts laws were better, but still they were faulty, and were more severe than the English laws in forbidding asylum superintendents to sign certificates. He thought that the judge should decide in every case of commitment, but it was too much to ask him to see every case. The emergency law as modified works well, but it is little used except in Boston and at the Boston Lunatic Hospital. It should be retained with modifications. The bond and extra certificate are needless, and the mayor and alderman clause is a farce, for blank signed applications are always kept on file. The voluntary law as practiced is a good thing, and beneficial for the patient, but, if strictly construed, the asylums could hardly take a case under it. Poor patients are often committed because if they went as voluntary patients, the physician would get no fee. The Board of Lunacy and Charity are sticklers for the letter of the law, but if the papers are correct they take no further interest and they never make any proper medical inquiry into the condition of the patient. It was none too soon to discuss these laws, and he believed fully in the necessity of having a commissioner in insanity.

DR. J. B. AYER liked the present method of commitment, but the law could not expect the judge to see every case; still it was well for him to do so if the physician were unknown. It was wise to require three years' practice, although it was unfair in some few cases.

DR. H. R. STEDMAN thought that the paper threw light on the flagrant deficiencies of the laws, but there were many minor defects. One was the narrow limit allowed for a patient's visit at home. It would be wise, if the physician saw the patient in the meantime, to

permit the patient to be returned to the asylum at any time within a year without a new commitment. Thus the patient could have the advantages of home life for a longer period, and would be spared the expense of a new commitment. The boarding-out laws were also defective. All hinged, however, upon the lack of a medical commissioner.

Dr. W. M. Knowlton thought it time to discuss the laws, although the Massachusetts laws are better than those of Connecticut, where the judge appoints only one man to examine the patient and sign the certificate.

Dr. P. C. Knapp believed fully in a revision of the laws and of the State and city boards. He had had occasion early in the winter to criticise the provisions of one of the recent enactments, but the only result was to call out a discourteous and irrelevant answer from an employee of the Board of Lunacy and Charity. He remembered that when he first committed a patient, although he was unknown to the judge, the commitment was made in the usual manner and the judge evinced no desire to see the patient. He saw no advantage and felt no relief from responsibility in a commitment by a judge. When he advised removal to an asylum he felt morally if not legally responsible for it, and the signature of a man who had never seen the patient and who knew nothing at all about insanity could do little to relieve that responsibility. In his brief asylum experience his method of informing the Board of Lunacy and Charity of the reception of a voluntary patient was by the bare formula, "A. B. has been admitted this day as a voluntary patient," without any statement as to the patient's condition. This was apparently accepted by the board, and no medical investigation was ever made. He believed fully in a commissioner or a board of commissioners in lunacy, or at least, that one or more ailenists should be placed upon the present board. The present state of things — a State Board of Lunacy and Charity, without a single man on it or connected with it who was an expert alienist — was absurd and disgraceful.

Dr. Fisher said that the judge is really responsible for the commitment, and he is the only person connected with the commitment who cannot be sued for infringement of the law.

Dr. Jelly, in answer to Dr. Ayer, said that practically no one was ever sued in this State, but the physician might be sued for malpractice.

Dr. C. F. Folsom said that laws were not the rules which were best for the community, but what the community demanded, and this was true of the lunacy laws. There was even now in the community a distrust of insane asylums. The clause forbidding asylum superintendents to sign certificates, was objected to at the hearing, but it was carried almost unanimously in the legislative committee. The laws can be criticised, but he knew of no respect in which by stretching them, they worked badly. The judge's share in the commitment he thought was a protection. If an attempt is made to revise the laws, may it not do harm by causing the passage of still more stringent laws? The voluntary law was of later origin, and was not passed as it was originally drawn. It included any one whether insane or not, but this provision was objected to and was stricken out. He doubted whether we could get the laws changed without getting more restrictions added. A lunacy commission was very desirable, but it was impracticable, for the whole Board of Lunacy and Charity and the State officials objected; furthermore, if it were established, it would not be possible to get provision for over $2,500 a year for the commissioner's salary, which was not enough to get a suitable man. In answer to Dr. Fisher he said that, for political reasons chiefly, very strong objections had been made to appointing an expert in insanity on the present Board of Lunacy and Charity.

Dr. Channing, in answer to Dr. Folsom's criticism, said that he was of the opinion that there were serious defects in our laws, as had been generally testified to by those present, and he did not feel that because it might be difficult to change the laws on account of public opinion we should give up trying to improve them. No reform came without effort. He therefore moved that a committee be appointed to consider the advisability of preparing a revision of the existing laws, and of drawing up new laws establishing a commissioner in lunacy, to serve as a basis for future legislation.

This motion was carried and the following committee was appointed: Dr. T. W. Fisher, chairman, Dr. Walter Channing, Dr. George F. Jelly, Dr. C. F. Folsom, Dr. P. C. Knapp.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M.D., SECRETARY.

March 26, 1888, Dr. C. F. Folsom, President *pro. tem.*

Dr. J. J. Putnam showed a case of

PERIPHERAL PARALYSIS FOLLOWING THE USE OF THE RUBBER TOURNIQUET.

He said: I asked this patient to come around principally because he exhibits in quite a marked way an interesting electrical reaction. It is not anything new to those who are accustomed to making electrical examinations, but it is rarely seen so well. He is one of two patients that I have seen within a comparatively short time, where a paralysis of considerable severity of the nerves of the arm has been caused by a rubber tourniquet; although the tourniquet was applied with every care and with great precaution. He is a patient of Dr. Porter, who, in operating on his hand, had occasion to use this apparatus. He had particularly in mind this accident, which had happened to another patient, and took especial care that it should not happen in this case. The injurious compression of nerves by a tourniquet is of course not unknown. It occurs from time to time, but as a matter of fact, I have rarely happened to see it with the old-fashioned tourniquet.

The point for which I asked the patient to come down is this: The tourniquet was applied at about the middle of the upper arm, and as a consequence he has complete paralysis of all the muscles below that point. When I say he has, I mean he had two or three days ago. For both these patients' improvement was so rapid that I will have to ask you to take on my authority the symptoms which they ought to show. He can slightly move the thumb, and very slightly the ends of the fingers. But he is practically paralyzed. In spite of this, the sensation is preserved over the

skin except to a very limited degree in the parts supplied by the radial nerve along the radial border of the index finger. Otherwise he is well. The nutrition of the muscles and nerves is also very well preserved. The muscles of the thumb show to a very slight degree the familiar degenerative reaction, indicating that the degenerative process has travelled down the nerve-fibre to the muscle, and that the latter has become the seat of a subacute inflammation.

The flexor muscles, however, do not show that, and they feel tolerably firm; so that a portion of the influences which are necessary for the life of the nerve are still permitted to travel through the injured portion. On the other hand, the voluntary impulse is not able to make its way through the part. Not only that, but the electrical stimulation is not able to make its way through. This is shown strikingly, and it is not often that one has an opportunity to examine so easily an arm in this condition. I will put the electrode in the right hand, and with the other follow up the course of the median nerve. The muscles contract until the point of injury is reached, and at that point and above it they fail to respond. At the point where the injury occurred the reaction ceases entirely.

I think the fact that sensation can travel through this injured part, and that the nerve can carry the influences for the preservation of the muscle, suggests some interesting speculations. It has seemed to me that it is perhaps a question of degree of impression, and that a very strong voluntary impulse could get through this part. A case occurred to me a few years ago which I think lends a certain support to that view. The patient had got his arm injured by sleeping on it, and had been treated a long time without gain. He belonged to a fire company, and at the time of the great fire in 1872, went out to serve with the engine, using all his force without thinking about it, and the result was that from that moment his arm began to improve, and recovered rapidly. It has occurred to me that it might be a good policy to advise patients to make strong efforts within certain limits, in the treatment of such paralyses.

CORTICAL APHASIA.

The other patient is one whose main symptom has to a great extent passed away. He is the subject of aphasia, and at the time when I first saw him, which was two or three weeks ago, it was a sensory aphasia to a considerable degree. At that time he spoke but very few words, but those he used correctly, but he did not understand what was said. When I asked him to shut his eyes or show his tongue, he did not do it. Now he understands almost everything. The case is complicated by the fact that the patient is a foreigner, and speaks only broken English, still, he used to talk with his fellow-workmen with ease, and must understand a good deal. He can read English, and speak English with comparative facility. He says that two weeks before New Years, while he was working, he had a sensation of a peculiar kind in the finger and thumb of the left hand, a kind of pricking sensation. This travelled like a sort of aura up the arm, and reached the face and went down the leg. It followed the regular course of the auræ in certain epileptic cases. This happened four or five times. Then the same thing occurred in the right arm, and then he lost his speech. There was a slight degree of right hemiplegia. Even at the present time the lines upon the right side of the face are relatively obliterated. When he talks a very slight degree of facial paralysis is seen. The hemiplegia is now gone. He can walk about as well as ever.

He shows also a peculiar change in vision of the right eye. I wanted to discover whether he had any hemianopsia, and so I tried a method which was suggested to me by Dr. Gowers in London, and that was to see whether he would wink when the hand was moved before the eye one side, and not when moved in the field of the other side. I thought I found that he had hemianopsia, but Dr. Wadsworth examined him and found that the whole right eye was more or less insensitive. He had a sort of crossed amblyopia, and that I think still persists to a certain degree. The interesting thing is that although the sensory aphasias are by no means uncommon, forming a part of almost any aphasia, still sensory aphasia to the extent which this patient shows, I think is uncommon when combined with a motor aphasia, and yet not associated with more paralysis than in this case.

Here is another patient, who, a few days ago, presented a marked facial paralysis, which is undoubtedly cortical. It seems that this came on in the night. She felt a chill and pain in the right arm. Then this paralysis of the face came on. She could not at first speak a word. In a few hours she spoke a few words, and then she gradually improved, and is still improving. When I saw her first the lower facial muscles were entirely paralyzed on this side. Even now the masseter muscles contract with very different degrees of force. The left hand is not paralyzed, although she drops very heavy objects.

What she evidently had was the blockage of a little vessel not going to the aphasic region, but supplying, probably, the lower end of the ascending convolutions, where the ordinary motions of the mouth are represented. In the beginning, either from the effect of shock upon the neighboring parts, or œdema, or because the circulation in them, too, was in a measure impaired, there was first aphasia, which faded away, and the symptoms are now reduced to the facial paralysis; and even that is now fading away by reason of the re-establishment of the circulation on account of the anastomoses in the pia mater.

DR. E. H. BRADFORD showed by card a specimen of

OSTEO-CHONDRO-SARCOMA OF THE LEG,

which he had removed from a young man twenty years of age. The tumor had existed for three years, and had grown to immense size. Dr. Whitney, who examined the specimen, had stated that it was of periosteal growth.

DR. JOHN HOMANS said: It reminds me of a case I had of the thigh a year ago, where I amputated. The young man did well for about four months, then he had a recurrence inside the pelvis.

DR. BRADFORD: I had a similar experience in an amputation of the hip for a sarcoma of the thigh. It was well for two months and then came back again. The disease in the specimen shown is below the knee and I amputated above the knee. I am in hopes that he will get on without recurrence. There is no enlargement of the glands.

(To be continued.)

— Talc has been found by Paris physicians effective in infantile diarrhœa, in doses of 20 to 30 grammes daily, in milk.

AMERICAN OPHTHALMOLOGICAL SOCIETY.[1]

EVENING SESSION.

HYSTERICAL BLINDNESS IN THE MALE, WITH A REPORT OF THREE CASES,

by DR WILLIAM OLIVER MOORE, New York.

The average proportion of cases of hysteria in the male to hysteria in the female is one to fifteen.

CASE I. Male, aged twenty-five, farmer; family history good. During past two years had suffered with nervous symptoms. Did not smoke or drink. In June, 1886, complained of failing vision in left eye. When seen June 16th, according to patient's statement vision in left eye = 0; in right eye normal. Ophthalmoscope showed normal fundus except a slight patch of opaque nerve-fibre near the papilla. Testing with prism and candle gave double vision as did pressure on one eye-ball. The patient was informed that treatment by electricity would cure him in a few days. A severe faradic current was applied, causing the patient to jump from his chair exclaiming that there already was improvement. In ten days $V = \frac{20}{xx}$ emmetropic.

CASE II. Male, aged twenty-two, student and farmer, fine looking; history of insanity in the family. Eighteen months previous to coming under observation atropia had been instilled by a physician to determine whether or not glasses were required. He thought from the effect of the atropine that he was going blind. He then put on smoked glasses, subsequently bandages and kept in a dark room. He would not open the lids and declared that he was blind. For ten months he kept in a dark room with covering over the eyes. On examination the lids were closed but not by spasm; the cornæ clear. V = 0. Ophthalmoscopic examination under ether, normal fundus. Hysterical blindness was diagnosed, and a favorable prognosis given. Cantholastis was then performed. Coming from the ether the patient opened his eyes and evidently saw clearly. He was told that the cause of the disease had been discovered and that he would be well in a few days. In two days he was walking around without glasses. Has remained well since.

CASE III. Boy, aged fifteen. Developed blindness in right eye after a disappointment at school. Normal appearance of eyes. Tests with prisms and colored glasses showed that vision was present. Ether was administered and patient assured that he would be well, and under electricity recovery was rapid.

DESCRIPTION OF A SERIES OF TESTS FOR THE DETECTION AND DETERMINATION OF SUB-NORMAL COLOR-PERCEPTION, (COLOR-BLINDNESS), DESIGNED FOR USE IN RAILWAY SERVICE,

by DR. CHARLES A. OLIVER, Philadelphia.

It is a well-known fact, both from theoretical and practical stand-points, that many "color-blinds," especially those of medium grades, have the power of differentiation even by day-light, of the most difficult colors when placed at ordinary metre distance of wool selection employed in the detection and determination of color-blindness. The writer has been induced through a hope to overcome the dangers that might arise from this power in situations such as railways, marine and naval service, where the safety of lives and the protection of property is oft-times solely dependent upon proper recognition of color at great distances and frequently through the intervention of more or less translucent media, to combine two modifications of his method of color selection to a simplified plan of the former procedure by which the candidate is placed in the actual position of after-work and under exactly similar circumstances as during employment. The method is divided into three parts.

First, the selection and registry of a definite number of loose wools from twenty-three pure and confusion match skeins thrown upon a dead black surface at one metre distance.

Second, the selection and registry of the same number of similar reflected colors under various intensities of diffuse day-light stimulus, placed at distances requisite for safety.

Third, the selection and registry of transmitted colors under various intensities of artificial light stimulus placed at distances requisite for safety.

In addition to the advantages shown to refer to the first test alone, this method has the following additional ones:

(1) Much faster in time than any other method. (2) The selection of loose wools at a distance. (3) No necessity for an expert except in doubtful cases. (4) Employment of the same character of signals for testing as is used in daily routine. (5) Placing the eye during testing at a distance necessary for future safety. (6) Bringing the eye during testing directly before the true condition of weather experienced as it is upon duty. (7) Test and match colors all graduated in proportionate size.

CASE OF EMBOLISM OF THE CENTRAL RETINAL ARTERY,

by DR. CHARLES A. OLIVER, Philadelphia.

The patient, a young man, was seen October 5, 1887. Twenty-six hours previously, while slowly walking in the shade, he was suddenly seized with blindness in the left eye. There were no other symptoms, and there had been no previous illness. The right eye was normal. Ophthalmoscopic examination of left eye showed clear media; nerve substance of a grey tint and swelling of the retina. All the retinal vessels were reduced in size. The veins were somewhat contracted, especially toward the nerve entrance. The characteristic cherry spot in the macular region was distinct. There was a small hæmorrhage out from the disk. Careful physical examination failed to reveal any lesion in other parts of the body. The case was kept under observation for some time, but there was no return of vision, the patient remaining completely blind in the left eye.

DISCUSSION.

DR. H. D. NOYES, New York. The result of autopsies shows that the great majority of these cases are really due to thrombosis and not to embolism.

Adjourned until Thursday morning.

THURSDAY, SECOND DAY. MORNING SESSION.

A CASE OF DOUBLE CONGENITAL IRIDEREMIA IN A CHILD WHOSE MOTHER EXHIBITED A CONGENITAL COLOBOMA OF EACH IRIS,

by DR. SAMUEL THEOBALD, Baltimore.

James O., aged eighteen months, was seen December 9, 1887. His mother brought him on account of the red appearance which the pupils presented. Upon

[1] Concluded from page 90.

examination, besides a congenital squint of the left eye, complete absence of each iris was discovered. The lenses were clear, and there seemed to be at least in the right eye, fairly good vision. The interest of the case lies in the fact, accidentally discovered, that there existed in the mother a congenital coloboma of each iris. In her right eye the coloboma was large, its direction being directly upwards; in the left eye it was somewhat smaller and was in an upward and outward direction. In neither eye was the choroid involved in the congenital effect. The mother volunteered the statement that an older child had had a similar appearance of the eyes, so that it is probable that to this mother with congenital coloboma, there was born not only one, but two children, with absence of the irides.

DISCUSSION.

DR. DAVID WEBSTER, New York. I think that the direction of the coloboma in the mother's eyes was unusual. I have seen a number of cases of congenital coloboma of the irides, but I do not recall an instance in which the coloboma was upwards. It is almost always downwards.

DR. B. ALEX. RANDALL, Philadelphia. Having had occasion to look up the literature of this subject, I can say that there are a number of cases reported of coloboma inwards or outwards, but not upwards. This case seems to be unique in this respect.

PUNCTURE OF THE RETINA FOR DETACHMENT,

by DR. T. Y. SUTPHEN, of Newark, N. J.

The results of the three operations were reported.

A male, sixty-two years of age sought treatment, April 1, 1887, for a cloudy appearance before the right eye. This he had noticed only a few days. He was near-sighted but had never used glasses. Examination R. S. $= \frac{1}{10}\frac{5}{5}$, raised to $\frac{1}{20}\frac{5}{5}$ by $-\frac{1}{16}$. Field of vision defective downwards and towards the median line. Tension slightly diminished. L. S. $= \frac{1}{10}\frac{5}{5}$, raised to $\frac{1}{3}\frac{5}{5}+$ by $-\frac{1}{16}$. Ophthalmoscope showed myopia with choroiditis in both eyes. In the right eye the retina was found detached in its upper and temporal portion. The patient refused to undergo vigorous treatment in bed. He was given iodide of potassium in gradually increasing doses, rest being enjoined.

Five months later the patient returned with commencing detachment in the upper and temporal portion of the left retina. He was then kept in bed for two weeks with the eyes bandaged, while profuse diaphoresis was frequently induced, but without benefit. He was then sent to the country, the iodide being continued. By December 1st there was in the right only perception of light; in the left there was vision confined to the outer and lower field. On this date puncture of the retina from beneath the detachment was made. Thorough antisepsis was employed; cocaine was instilled, a sickle-shaped needle was thrust into the globe between the insertion of the external and inferior recti muscles, on the equator and on a plane with the lens, it was pushed onward until it was thought that the retina had been pierced. It was then withdrawn with a sweeping motion, the object being to enlarge the opening in the retina. Atropine was instilled, the eyes bandaged and the patient ordered to keep quiet. The following day, the subretinal fluid had disappeared, field of vision was normal, a red reflex was obtained from the fundus in every direction and the patient could distinguish large objects. Bandage reapplied. Two days later patient could count finger at twelve feet, the retina appeared in the normal position but the vitreous was quite cloudy. The vision continued steadily to improve. December 10th, a similar operation was performed on the left eye. Two days later there was marked enlargement of the field of vision, but some detachment was still to be seen on the temporal side. December 16, field of vision in both eyes normal. No detachment of retina in either. The patient remained in bed twenty-eight days. February 10th, detachment began to reappear in the left eye. By March 3d it was as great as before. Needling was again performed, with the escape of very little subretinal fluid. March 5th, field again normal. April 1st, partial return of detachment in left eye. July 6th, seven months after first operation, S. R. $\frac{1}{10}\frac{5}{5}$, raised to $\frac{1}{3}\frac{5}{5}$ by $-\frac{1}{20}$. No return of detachment. Field of vision normal. Blindness for red. In the left eye almost complete detachment of the retina.

After referring to the history of the operation the speaker said that the interesting facts were these: The apparently perfect safety of the operation under modern antisepsis; one success and two failures under exactly similar conditions, barring the escape of the fluid outwards in the successful case; encouragement to try this operation in otherwise incurable cases; the absolute freedom from all reaction. The best results will probably follow where the operation follows closely upon the subsidence of the acute affection causing the detachment. The chances of success are increased by a free flow of fluid outwards. It was suggested that a narrow Graefe knife might be used after accurately measuring the depth of the detachment, provided the point be so directed that the wound in the retina shall be directly opposite the scleral puncture.

DISCUSSION.

DR. J. F. NOYES, Detroit: I have tried operative procedure in only one case. I drew off the fluid with a hypodermic syringe. After drawing off the fluid the retina returned to its normal position, and in it the outline of a small tumor was discovered. The detachment soon returned. The ball was enucleated one year later.

A CASE OF GLIOMA,

by Dr. E. P. CAPRON, of Providence.

The patient was a child three and-a-half years of age. The growth was removed, but has since involved the submaxillary glands and the glands in the neighborhood of the ear.

Photographs showing the appearances were presented.

DISCUSSION.

DR. D. B. ST. JOHN, Hartford: I would ask whether aid in the diagnosis between glioma and other affections is obtained by attention to the state of the tension.

DR. DAVID WEBSTER, New York: I think that I have never been able to detect any increase of tension until the second or inflammatory stage has been reached. Then there is always, I think, increase of tension. In at least two cases I have diagnosed glioma from the history with the existence of increased tension, when no tumor could be discovered. There is now on record a case in which Dr. C. R. Agnew removed both eyes of a child one year of age for glioma. This was fifteen years ago, and the individ-

ual is still living. In this case the diagnosis was verified by microscopical examination. In some cases where the diagnosis was made but enucleation refused, the patients are still alive, and the disease has not progressed, retrograde metamorphosis having, it is said, taken place.

The President, Dr. W. F. Norris: My impression is that in true glioma, retrogressive metamorphosis does not take place. Fatty degeneration may occur in parts of the growth, but I am not aware of a case in which the growth entirely disappeared. Such cases are, I think, instances of mistaken diagnoses. The diagnosis is difficult unless the growth has reached such a size that the vessels may be seen in it.

MODELS EXHIBITING REFRACTION BY CYLINDERS,

by Dr. Swan M. Burnett, Washington.

It was shown how the refraction and focal line change with the variation in the shape of the lens, and with the alteration of the angle of crossing of their axes. The models were made at his suggestion by Mr. C. E. Prentice, of New York. Diagrams were exhibited showing by geometrical construction how it was possible to tell the course of any given ray after its refraction by any two cylinders of differing power, and at any angle of crossing of their axes. A formula applicable to any axis of crossed cylinders, calculated by Mr. Prentice, was also shown.

Dr. B. Alex. Randall, Philadelphia, exhibited some drawings showing

ANOMALOUS OUTGROWTHS UPON THE OPTIC DISC,

and also drawings of

ANOMALIES OF THE RETINAL VESSELS.

DESIGNATION OF PRISMS BY THEIR REFRACTIVE POWER,

by Dr. Edward Jackson, Philadelphia.

The author pointed out the inconveniences and errors arising under the present method of designating the strength of prisms, and recommended their designation by their refractive power as much more accurate. A Committee consisting of Dr. H. D. Noyes, Dr. Edward Jackson, and Dr. Swan M. Burnett was appointed to take the matter into consideration and report at the next meeting.

EXTRACTION OF A PARTIALLY ABSORBED CALCAREOUS LENS,

by Dr. David Webster, of New York.

March 15, 1888, C. C., aged twenty-three, consulted Dr. Agnew and the author at the Manhattan Eye and Ear Hospital. She had phthisis bulbi, left, and in the right eye were the calcified remains of a mostly absorbed lens, with a discolored, atrophic-looking iris attached to the membranous mass by numerous adhesions. Visual field good. V = fingers at two feet. The vision of the left eye had been lost through a blow with a whip at the age of two years. A catarrh developed in the right eye some time afterwards. Seven years ago (1881), her sight having been lost four months, both eyes were operated on by a surgeon in another city several times. Violent inflammation followed one or more operations on each of the eyes. Eighteen months ago another needling was done by another surgeon, by which sight was somewhat improved. The atrophic eye, of late, has been painful and tender on pressure.

March 16th. Dr. Agnew enucleated the atrophic eyeball. A calcific plate was found in the choroid, and a small calcareous lens. While the patient was still under ether, he did an iridectomy on the right eye.

April 27th. Dr. Webster divided with Knapp's knife-needle two or three of the adhesions which were on the stretch. At least, one could be heard to snap when cut. An attempt to penetrate the thinnest-looking portion of the membranous mass failed. There was considerable effusion of blood, which was soon absorbed.

May 14th. An attempt to remove the pupillary obstruction with a sharp hook failed. Very little reaction.

June 6th. With a keratome bent on the flat, a wound was made as for iridectomy on the superior nasal corneal border. The pupillary obstruction was drawn out and cut off close to the cornea. Not a drop of vitreous escaped. There was some pain in the eye for three or four hours, probably the reaction from cocaine. Four days later pain again appeared, and was relieved by iced cloths.

June 18th. Fundus normal; no floating bodies in the vitreous, but the remaining portion of the pupillary membrane, which, by the way, was very thick and so tough that the iris-scissors would scarcely cut it, extends backward horizontally and flaps up and down with the movements of the eye.

June 22d. V = $\frac{20}{200}$, with $-\frac{1}{32}$. Reads Jaeger No. 1 with $+\frac{1}{2.25}$.

June 26th. Discharged, wearing the above spectacles.

Dr. Samuel Theobald, of Baltimore, exhibited an unusually long cilium. The hair was over an inch in length, and was removed from the eyelid of a young lady suffering with some conjunctival irritation. The other cilia were of the usual length.

The officers for the ensuing year are: President, Dr. W. F. Norris, Philadelphia; Vice-President, Dr. Hasket Derby, Boston; Corresponding Treasurer, Dr. J. S. Prout, Brooklyn; Recording Secretary, Dr. Samuel B. St. John, Hartford.

It was decided to hold a special meeting for the consideration of scientific matters only, September 19, 1888, at the Arlington Hotel, Washington, D. C.

The regular meeting will be held the third Wednesday in July, at the Pequot House, New London, Conn.

Adjourned.

AMERICAN OTOLOGICAL SOCIETY.[1]

A CONTRIBUTION TO THE ANATOMY OF THE ELEPHANT'S EAR,

by Dr. A. H. Buck, of New York,

The ear was exhibited, and the interesting points indicated. The external auditory canal is imbedded in air-containing cells, and is six and one-half inches long. The canal at the time of examination, was filled with desquamated material. In the middle ear, the handle of the hammer seems to lie in a horizontal plane. It is not vertical, as in the human being. The anterior part of the drum cavity is completely cut off from the posterior part. The eustachian tube comes up through a system of air-cells, and opens through one of them close to the drum membrane. Under the

[1] Concluded from page 88.

floor of the tympanic cavity, there are three septa making stall-like spaces. Two of these are quite long, six or seven inches. The labyrinth and other parts were not examined.

A CASE OF POLYPOID ANGIOMA OF THE EAR,

by DR. HUNTINGTON RICHARDS, of New York.

The patient, a girl six years of age, came under observation May 4, 1888, with profuse and badly smelling otorrhœa, unaccompanied by pain and dating only from the preceding February. Hearing seemed good; no bleeding from the ear had ever been observed. The general health was excellent. Examination of the affected ear revealed a polypoid mass almost occluding the canal. The color was deep purplish red. A considerable portion of the tumor was at once removed with the snare, and the remainder of the growth was extracted on the following day, having a small pedicle attached, seemingly to the outer surface of the drum membrane close to the prominence formed by the short process of the hammer. This stump was cauterized with chromic acid. Hæmorrhage from the cut surface of the growth was unusually profuse at both operations. The child's hearing is now excellent, although both membranes are depressed and of a dark grayish-red color. The removed growth was pronounced to be an angioma. Three micro-photographs showing the appearance of the growth were shown.

A CASE OF FALSE DRUM MEMBRANE.

by DR. HUNTINGTON RICHARDS of New York.

The patient, a man twenty-one years of age, was totally deaf in the affected ear. There was a vague history of an attack of otitis media in early childhood. The other ear presented the common appearance of otitis media purulenta chronica. Examination of the ear that was not discharging showed a membrane occluding the canal. It differed from the normal drum membrane in color, shape, relation of its plane to the long axis of the canal, and apparent thickness. It varied little in color from the skin lining the canal. The surface was perfectly smooth.

A triangular opening was made through this membrane; This caused no pain. Through this opening it was seen that there was no drum membrane, but the inner wall of the tympanic cavity came into view. The hearing was only slightly improved. When seen a few days later, no discharge had appeared! Since that time he has not returned to the infirmary.

DISCUSSION.

DR. S. SEXTON, New York. I have seen several such cases as that described in the last paper. In a case seen last year, I removed the membrane, and then took out the malleus and incus. This case made a good recovery. The improvement in hearing was decided. I would suggest this operation, in such cases, as a possible means of improving the hearing, for it opens up the tympanic cavity which is a good condenser of sound; and in the second place to prevent the accidental occurrence of imflammation in these parts when it might be difficult to obtain relief.

DR. T. Y. SUTPHEN, Newark. I have seen one or two cases of this trouble, which seems to me to be due to cicatricial closure of the external canal. It seems to me that the condition would be best spoken of as cicatricial closure of this canal.

DR. CHAS. J. KIPP, Newark. These cases result from granulations and I have watched the formation of these membranes. In treating this condition, I have incised the membrane and put in laminaria bougies, and it has disappeared.

DR. A. MATTHEWSON, Brooklyn. A lady was under my care for some time with an eczematous condition of the external meatus. She then passed from observation. Some time later she presented herself with a dish-like closure of the external canal. This was not complete, as there was a small opening in the centre. I dilated this opening with laminaria bougies, and the ear was left in perfect condition.

DR. SAMUEL THEOBALD, Baltimore. The members may recall a case which I reported, in which there was occlusion of both external canals. There was a history of suppuration, and no doubt there was ulceration and gradual closure.

DR. CHARLES H. BURNETT, Philadelphia. I have seen several of these cases of dermoid diaphragms in the canal. Three of these were in private practice. One was in an old man, and it remained imperforate during the whole time he was under observation. The other cases were perforate when they came to me. There was slight discharge, which I checked, and the perforation healed. In one case the discharge returned after a short time, and the perforation reappeared. Under treatment, it healed; and I have reason to believe has remained closed since, a period of four or five years. In the other case it remained closed for a year, when the opening returned with slight discharge. The discharge ceased under treatment, the opening closed, and has remained closed.

DR. B. ALEX. RANDALL, Philadelphia. In the case of a boy twelve years old, in which there was closure of the meatus as a result of injury with forceps during labor, I excised the diaphragm; the cavity was thoroughly washed out; the case was then treated in the ordinary way. The hearing obtained was certainly one-fourth of the normal.

EVENING SESSION.

THE FLEXIBLE CATHETER AS A DRAINAGE-TUBE, WITH CASES,

by DR. J. B. EMERSON, of New York.

The author cited several cases exhibiting the use of the flexible catheter as a drainage-tube. With deeply-seated inflammation of the auditory canal or mastoid cells, maintainance of drainage through a fistula is a necessity; and to prevent closure of the fistula either by granular growth or natural healing is important.

Dr. Emerson recommends the use of the flexible catheter as generally the best means to employ, and states his reasons to be the comparative comfort and safety, together with convenience of control by both surgeon and patient. The efficiency observed in the use of the flexible catheter was also referred to.

DISCUSSION.

DR. O. D. POMEROY, New York. Some years ago I recommended the use of a soft rubber tube in suppurative otitis in little children with closure of the canal, with no changes except swelling. The canals are so small that the tube cannot be pushed in in the ordinary manner. A piece of small tubing was hooked to the extremity of a metal probe which passed through it. The tube was then drawn tight thus reducing its size. In this way it could be readily introduced,

When the tube was released, it tended to resume its proper size, and the probe was withdrawn. Almost all these cases did well.

THREE CASES OF TRANSIENT BILATERAL HORIZONTAL NYSTAGMUS IN CONNECTION WITH PURULENT INFLAMMATION OF THE MIDDLE EAR,

by DR. CHARLES J. KIPP, Newark.

CASE I. A young man, twenty-one years of age, had had otorrhœa seven or eight years previously. Three months before coming under observation he had an acute exacerbation and suffered intensely with pain in the ear and head. The otorrhœa much diminished. Two or three weeks later he came stating that he saw objects double, was dizzy and could not walk. There was marked nystagmus in a horizontal direction. The vertigo and nystagmus continued four days. With the cessation of the nystagmus the vertigo disappeared.

CASE II. A young man treated six years previously for acute otitis media purulenta, ending in recovery, appeared in March with an acute attack. Paracentesis was performed. The pain, however, continued for a long time. Finally, swelling developed behind the mastoid, and this was accompanied with several epileptiform attacks. One day, pressing on the swelling pus poured from the canal. With this there was a sudden jerk of the head and nystagmus. The latter continued for about ten minutes; this was produced every time pressure was made on the mastoid. The mastoid was subsequently opened; since then there has been improvement.

CASE III. A young man, after exposure, was seized with intense pain in the ear followed by otorrhœa. When he came under observation there was great pain. This was not relieved by treatment but continued two or three weeks. Then a swelling appeared below the ear. This was incised and a large quantity of pus evacuated with relief to the pain. Some days later while washing out the cavity, the fluid came through the ear when considerable force was used. At the same time there was a jerk of the head and nystagmus continuing several minutes. This could always be produced by making a forcible injection.

DISCUSSION.

DR. O. D. POMEROY, New York. Reference has been made to epileptic symptoms in one of the cases. I have recently seen a case of epilepsy in which the exciting cause was suppuration of the middle ear. With recovery from the ear disease the convulsions ceased and have not returned.

AN IMPROVED AURAL SNARE,

was exhibited by DR. J. O. TANSLEY, of New York.

The snare was devised to overcome an objection to the ordinary Wild snare, that is, the little jerk and rebound of the instrument when the growth is cut through. The instrument exhibited consists of a small tube, through which the wire passes to be connected with a small bobbin by the turning of which it is gradually shortened.

A paper by DR. S. SEXTON, New York, on

FOREIGN BODIES IN THE EXTERNAL AUDITORY CANAL,

was read by title.

EXECUTIVE SESSION.

The following officers were elected: *President*, Dr. J. S. Prout, Brooklyn; *Vice-President*, Dr. Gorham Bacon, New York; *Secretary* and *Treasurer*, Dr. J. J. B. Vermyne, New Bedford, Mass. *Committee on Membership*, Drs. A. Matthewson, D. B. St. John Roosa, and John Green. *Delegate to the Congress of American Physicians and Surgeons*, Dr. W. H. Carmalt, New Haven; *Alternate*, Dr. G. Bacon, New York.

The Society then adjourned, to meet at the Arlington Hotel, Washington, D. C., Tuesday, September 18, 1888.

Recent Literature.

The Applied Anatomy of the Nervous System. By AMBROSE L. RANNEY, A.M., M.D. Second edition, rewritten, enlarged and profusely illustrated. New York: D. Appleton & Co. 1888.

As the author states in his preface, the success of the first edition of this book has induced him to prepare another which is practically a new work. The difficulties of the nervous system make its applied anatomy very welcome. The author brings much learning to his work and gives an excellent account of the central nervous system in what we may call the diagramatic style. We are best pleased with the chapters on the brain. It is as clearly and simply treated as its complexity permits. We think there is but little of it that a good student with a fair knowledge of the coarser anatomy of the organ could not grasp. The author shows commendable prudence in the matter of accepting theories, but he may appear to some rather too free in giving the discordant views of different authorities. This is confusing to the student, but in the uncertainty that hangs over so much of this subject, it can hardly be avoided. The treatment of the nerves, especially the spinal nerves, is to our mind, rather less satisfactory. We will not say that there is too much of Hilton, whose views, if at times fantastic, are still fascinating and valuable, but there is too little of recent observations. The causes of the curious diversities of paralysis occasionally following division of some of the nerves of the forearm, require more extended discussion.

The book is profusely illustrated with figures of very unequal merit and appropriateness. There are beautiful plates showing cerebral localizations according to Horsley and Beevor. The diagrams are well-conceived and well-executed. Illustrations of minute anatomy seem out of place in a work of this kind. We can see no advantage in representing nerve-fibres, but if the author thinks otherwise he should at least give us something better than Kölliker's figure of thirty years ago, more or less, representing what we now know to be changed and distorted elements. The description of the figure of the separated brachial plexus from Sappey (p. 666), is incorrect. The musculo-cutaneous nerve is called the musculo-spiral, and the latter, from too close a following of the French idiom, is called the radial. This, however, is nothing to the blunders in the description of the plate on the next page. The median nerve is called the musculo-cutaneous, the ulnar the median, the musculo-cutaneous the musculo-spiral. The introduction of tests for astigmatism is, we think, irrelevant. The text is not free from error that moderate care would prevent. In the

chapter on the membranes of the brain the arachnoid is correctly described as a membrane between the dura and pia, and having the subdural and subarachnoid spaces on either side of it. We are told that "it is continuous with the membrane filling the same relative position in the spinal canal, known as the 'spinal arachnoid,'" but when we turn to the description of the latter we find, to our confusion, that it, "like all other serous membranes, consists of a closed sac with a cavity between its two layers." We regret these defects the more because we can heartily commend the book as a whole. It will, we are sure, be useful to both teachers and students. T. D.

The Massage Case. By CYRIL BENNETT. London: S. Fisher Unwin. Boston: Cupples & Hurd.

This is the first novel that has come to our notice in which massage takes a prominent part. It is a very good story told with the simplicity and earnestness of truth, and probably part, if not all of it, is founded on fact. It is about a young lady worn out and sad from the illness and death of her mother, who, simply needed rest and change; but instead was sent by a managing aunt to a Nursing Home for imprisonment, in order to break up an injudicious love match. The patient quickly discovered that she was the only lady in the Home, and that she was being regaled with rather too much tobacco smoke, which proceeded from the rooms of other guests. The nurse was ordered to give her massage for two hours daily at first, and this was to be gradually increased to three hours daily. "It consisted of violent pinching from head to foot, and was a torture worthy only of the Spanish Inquisition." The administration of the electricity was no better. We need not go from home to find Nursing Homes and Private Hospitals of this kind.

There are some keen delineations of character in the book. The eminently successful practitioner, who overwhelms people with his powerful individuality, and compels them into saying and doing what he means them to say and do, is well described. So also is the highly appreciated old-fashioned nurse, who has become a little too knowing, and who freely expresses her opinion about massage, thus: "To begin with, it's very seldom done quite right. The doctors don't know how it ought to be done, and they depend on the nurses; and in nine cases out of ten the nurses have been taught badly, and it's the blind leading the blind." But what became of the patient? That is just how our readers can while away a few hours very pleasantly in finding out for themselves, during which they will not be bored with massage. D. G.

— The increase of medical men in England from 1881 to 1886 was 1,908, being more than twice as many as the proportionate increase in population required. Yet in this increase, which is properly deplored by the profession, leaves our English brethren considerably better off than us. In 1881 there were 1,747 persons (that is possible patients) to each practitioner; in 1886, 1,662. In Sheffield there now are 2,593 persons to each practitioner; in Liverpool, 1,564; in Bristol, 1,232; in London, 939; while in Brighton, which is spoken of as a most unhappy place for a doctor, there 726 persons to each practitioner; about the same ratio, we believe, which obtains on the average throughout the United States.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, AUGUST 2, 1888.

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THE SURGICAL TREATMENT OF INTESTINAL OBSTRUCTION.

THE recent publication in full of Senn's experimental work[1] arouses anew the interest in this most serious class of cases. Encouraged by the success due to the modern method of dealing with gunshot wounds of the intestine, the writer determined to investigate the operative treatment of intestinal obstruction which constitutes, as he justly says, one of the darkest and most unsatisfactory chapters in the wide domain of abdominal surgery. His aim has been to devise if possible a method which should not only remove or render harmless the cause of the obstruction, but also by the same operation restore at once the continuity of the intestine.

For this purpose he has studied the subject in a most thorough manner. One hundred and fifty operations were performed on animals requiring a period of one and one-half years for their completion and the observation of their results. Not only were new operative procedures for the relief of intestinal obstruction thoroughly tested, but also the conditions resulting from the principal varieties of such affections. In this manner some very valuable data have been obtained, which in part confirm results of other observers, in part introduces methods and technique greatly increasing the possibility for relief of these cases. Most conspicuous among these results are: First: An improved method of uniting a resected intestine, which is a modification of the "Jobert" suture, if such a marked modification may be so described. Second: A method of relieving obstruction by forming anastomoses by means of "approximating plates." Third: The transplantation of omental flaps to render more certain the immediate union of intestinal wounds. These methods, according to Senn's experimental work, certainly do have decided advantages over the present method of uniting intestinal wounds by suture only, since they materially shorten the time required for such operations, a factor of the greatest

[1] Reprint. Ann. of Surg., 1888, January to June.

importance, and apparently increase the chances of immediate union, the failure to obtain which, usually costs the patient his life. They also avoid in a majority of cases the necessity of colotomy..

The interesting question of how extensively the intestine can be resected with safety, which Hahn [2] discussed some time since, and to the answer of which the cases of Kœberlé, Kocher and Baum contribute valuable data, has been investigated. In cases of multiple strictures, ulcerations, gunshot wounds or gangrene, where the lesions are large or in close proximity, excessive resection is unavoidable, and an accurate knowledge of the extent of intestine which can be removed with impunity, becomes of vital importance. It is not so much in regard to the immediate danger from so severe an operation, which is proportionate to the extent excised, but with reference to the remote risks from inanition resulting from the consequent impairment of digestion and absorption. In cats and dogs removal of more than one-half of the small intestine is dangerous to life. Excision of the entire colon invariably caused the death of the animal by shock due to the operation, and is, therefore, impracticable. These results coincide with Hahn's statement that loss of a large extent of small intestine is better tolerated than the resection of an equal amount of ileum and colon. It leaves unanswered the question as to whether the resection of a portion of the colon is more fatal than an equal amount of small intestine, except when the amount equals the entire colon, the removal of which was found to be invariably fatal.

The physiological exclusion of a certain portion of the intestinal tract is demonstrated to be a less dangerous operation than excision. This, in addition to the rapidity with which this can be accomplished, urge its employment rather than resection. It is especially of value where resection is impracticable, or where the pathological conditions which have caused the obstruction do not constitute *per se* an immediate or remote danger to life. An interesting and important fact in connection with these anastomoses is that the excluded portion of the intestine including the obstruction, does not become the seat of fæcal accumulation, and Senn claims that peristaltic or anti-peristaltic action is effective in forcing back into the active current of intestinal circulation whatever portion of the intestinal contents may have entered this isolated tract. As soon as a free communication is established through the artificial opening a progressive atrophy of this occluded portion occurs.

The value and importance of Senn's method of anastomoses, which permits the restoration of the continuity of the intestine and enables the surgeon to avoid colotomy, an operation often attended by such deplorable results that many patients becoming objects of disgust to themselves and unendurable to their friends prefer death to such an existence, can be readily appreciated by one who has had to operate when the nature of the obstruction rendered its removal impossible. Intestinal anastomoses furnish a means of escape from this distressing alternative, and only in inoperable cases of rectal cancer is immediate restoration of the continuity of the intestine contraindicated. It is especially desirable when an artificial anus for relief of obstruction in the upper part of the ileum or jejunum isolates so large an absorbing surface that the unfortunate victim dies from starvation. Gastro-enterostomy, jejuno-ileostomy, ileo-ileostomy, ileo-colostomy, ileo-rectostomy, colo-rectostomy, are terms which give some idea of the operations which this method of anastamoses by lateral apposition and approximation-plates renders possible.

Among the many facts obtained by Senn from his experimental work, the following are of especial importance:

Operations which reduce the lumen of the intestine to less than one-half its normal size cause danger from obstruction and perforation. Gangrene and perforation due to defective blood-supply invariably occur when the integrity of the mesenteric attachment is destroyed. Fæcal accumulation above the seat of an invagination is one of the most important factors preventing spontaneous reduction, and causing gangrene with perforation. This gives, perhaps, an additional importance to gastric *lavage* as a means of removing such accumulations, and thus aiding reduction.

Ileo-cæcal invagination, when recent, is often reducible by distension of the colon with water, but the greatest gentleness should be used, since over-distension causes multiple longitudinal lacerations of the peritoneal coat, an accident from which the gravest consequences may ensue.

The omental "flap" or "graft" is a procedure which furnishes an additional protection against perforation in all cases of circular resections.

Intestinal anastomosis is preferable to resection or circular enterorrhaphy in all cases when it is impossible or impracticable to remove the cause of the obstruction; or where the obstruction, from its pathological character, is not an intrinsic source of danger. The method of lateral apposition with bone-plates should always be used in gastro-enterostomy, jejuno-ileostomy, and ileo-iliostomy. Obstruction in the colon and cæcum, and all cases of irreducible ileo-cæcal invagination, when gangrene or impending perforation does not contraindicate the procedure, should be relieved by the proposed method of anastomoses. or by lateral implantation of the ileum into the colon or rectum. Gangrene or perforation requires excision of the invaginated portion, followed by immediate closure of the resected ends with ileo-colostomy or ileo-rectostomy.

Lateral "appo-ition," or "implantation," permits the restoration of the canal where circular enterorrhaphy is impossible on account of the difference in size of the resected ends.

Scarification of approximated peritoneal surfaces hastens the formation of adhesions and the healing of intestinal wounds.

[2] Berl. klin. Wchnschr., 1887, Bd. xxiv, 146.

THE MIND-CURE AND FAITH-CURE DELUSION.

REV. LEONARD WOOLSEY BACON, in a recent number of the *Forum*, discusses the "Mind-Cure" and the "Faith-Cure," and says some sensible things, for which he deserves the respect of all doctors.

The mind-cure, which, according to its leading representatives, is only a synonym for what is also called "Christian science," is, says Mr. Bacon, "an artless application to the subject of pain and disease of the well-known Berkelian argument for the non-existence of the material universe, or the argument which admits no refutation and produces no conviction." Since sickness and pain are only forms of consciousness, having no objective reality, what more obvious than that they should be treated as such? The seat of disease being the mind, let the mind be treated with mental influences, and not the body with drugs — admitting for a moment the popular prejudice that there are such things as drugs and bodies. This method of dealing with illusive diseases by an illusive treatment at the hands of an illusive practitioner has much to recommend it, if only it can be consistently carried out. But at one critical point it has constantly and conspicuously failed. The fee of the physician (or "metaphysician," as he delights to call himself), remains up to the present date a hard, metallic, refractory, and objective fact, which obstinately refuses to immaterialize itself." "Until the mind-cure makes this final and splendid advance, by which the doctor's bill shall be satisfied through his inward contemplation of ideal gold and greenbacks, its chief value must continue to lie in the popular protest which it makes against materialism by means of its funny books and its considerable number of devotees."

Concerning the "faith-cure," Rev. Mr. Bacon, from the standpoint of its advocates, presents a cogent argument to show that a flagrant error in exegesis has been committed, which vitiates the inferences which have legitimatized this system of supernatural therapeutics. "It relies upon an alleged divine promise, which it claims to find in the epistle of James (Chap. v: 14), and consists in abstaining from medical advice and treatment of every sort, and in sending, instead, for the male and female practitioners of the 'cure,' who apply, instead, a sacramental 'anointing with oil,' together with prayer. It is claimed that the divine promise is express, clear, and unmistakable that the anointing and prayer shall be followed by the healing of the sick, although when this fails to follow, there is always some adequate explanation at hand to save the credit of the divine word. And it is further claimed that in the devotees of this system we have a shining example of primitive and apostolic piety, a childlike faith, an obedient following of the letter of the divine word, which puts the rationalizing half-belief of ordinary modern Christians to shame."

Mr. Bacon discusses this latter claim and the Scripture exegesis. The claim, he says, is not to be tolerated. It is quite without foundation. "Among these high livers and 'faith-curers' there are some more or less intelligent people, and some not so good. As we meet them casually, we commonly find them pitiably bloated with spiritual self-conceit. Their childlike following of Scripture is apt to stand in a huge delight in their favorite scraps of the sacred text and their favorite blunders of interpretation. As a class, they are not one whit better than the plain, ordinary Christian who loves God and his neighbor, does his daily work faithfully, pays his debts a hundred cents to the dollar; and in point of humility and meekness and intelligent understanding of the Scriptures, they are decidedly worse."

In considering the interpretation of the famous text of the Epistle of James, Mr. Bacon shows: (1) That this verse does not inculcate or imply the instituting of a sacrament of religious unction for healing to be observed by all Christians; nor is there any allusion in the other apostolic writings to the practice of such a sacrament, nor is it recognized in the early Church after the Apostle's days. (2) The word *anointing* is sometimes spoken of in the New Testament in a secular sense, with reference to its cosmetic, antiseptic, hygienic, and medicinal uses. For this sense, a wholly secular word is used, which is never employed in a religious application; it is, says Mr. Bacon, a significant fact that this secular word is the one which we find in the text. The medicinal use of oil as an embrocation "was very common and important in the therapeutics of that age and region." The Good Samaritan, practicing the surgery of the period, poured oil and wine into his patient's wounds. Celsus, Pliny, Josephus, etc., mention oil baths and oil rubbings as an important part of the therapeutic applications of the times. (3) Having shown that the "anointing with oil," means simply resorting to the ordinary curative means of the day, Mr. Bacon discusses the meaning of "sending for the elders of the Church." This body of gifted men, he says, the leaders of the Christian brotherhood, included men endowed with talents fitting them to serve their fellow-believers, not only as leaders in worship and teaching, but also in more secular needs. These "gifts" were not necessarily miraculous. The catalogue of them in Corinthians (I Cor., xii: 8–10), makes separate mention of the gift of miracles among other gifts which clearly were not miraculous. And a notable fact it is that the *gift of healing* is not included in the gift of miracle-working, but is mentioned separately with gifts of another kind. Among the talents bestowed for the good of the Church, was a talent for teaching, a talent for exhorting, a talent for managing affairs, a talent for comforting the sick and sorrowful, and a talent for treating diseases. There is not a particle of evidence that this last gift was any more miraculous than the others, and there is distinct evidence to the contrary." By considerations such as the above, Mr. Bacon shows that the text in James "begins to grow lucid in the light of the other Scriptures," and "congruous with the plain, hearty, divine-human, common-sense that is the

preëminent characteristic of this Epistle." Rightly understood, then, the text, instead of giving any encouragement for the founding of a "faith hospital," or the establishment of camp-meetings for "faith cures," is "the counsel of a wise spiritual leader, given apparently in a time of some prevailing epidemic, to the Church, that at the first outbreak of sickness in a family, instead of beginning on the case with a little amateur domestic practice, or with some simple prescription from the neighbors, or with the incantations of some heathen quack or 'medicine man,' they should at once send for the gifted and experienced professional physicians of the community, as well as for the spiritual counsellors and comforters."

The above interpretation of a much misunderstood and much perverted text, will pass for good Nineteenth Century Scripture.

LEPROSY IN THE SANDWICH ISLANDS.

The leprosy of the Sandwich Islands is of especial interest to us in the United States because of our proximity to the Islands, and especially because the efforts of the Government to control the spread of the disease have a certain tendency to drive lepers to us to escape the isolation to which they would be condemned if they remained. The report of the Hawaiian Board of Health, just received, is devoted largely to questions connected with leprosy, and contains many interesting tables and statements concerning the disease and its progress. In the first place, the President of the Board states his conviction that the medical profession of the Islands are unanimous in the belief that leprosy is a communicable disease, and that every leper is a possible source of contagion to all who may come into more or less intimate contact with him. Leprosy was first clearly made out in the Islands about 1840. In 1868, the number of lepers was supposed to be 274. On March 31, 1888, the number of lepers at the leper settlement on Molokai was 749, 495 males and 254 females. The number of lepers still at large cannot be given with accuracy, but it is not over-estimating their number to put it at 644. No person is consigned to the leper settlement without his being declared to be a confirmed leper by, at least, three competent physicians.

The greatest obstacle to be overcome in carrying out the law of segregation lies in the fact that the Hawaiians themselves refuse to believe that leprosy is a communicable disease. Marriages between leprous and non-leprous individuals are freely contracted, and the most reprehensible intimacies are not prevented by patent evidences of the disease, and public sentiment does not support the executive in carrying out existing laws. One of the most embarrassing questions that the Board of Health is called upon to settle is who and how many of the relatives of the afflicted shall be allowed to accompany them to the leper settlement. It is necessary to retain at the leper settlement a certain number of non-leprous individuals for various services as helpers, and the number of applicants for such positions is largely in excess of the demand. In April last, a Commission visited the leper settlement and examined those on the list of lepers who thought themselves wrongly classified, and also those not on the list who were thought by themselves or others to be lepers. Of 66 helpers (kokuas) examined by the Commission who had resided with the lepers for various lengths of time, and who, presumably, entered the settlement without the suspicion of leprosy in their bodies, 23 were found to present unmistakable signs of leprosy, and 11 more were designated as suspected lepers — a strong argument in the eyes of the Commission of the contagiousness of the disease.

Of the newspaper report as to the appearance of leprosy in a condemned criminal pardoned for the sake of experiment, no mention is made in the report.

The Board of Health is not satisfied with attempts to stamp out the disease by segregation, but is active in efforts to improve the condition of the lepers themselves. The methods of Unna are already in use in a special leper hospital, and the Board publishes a letter to Unna, in which they appeal to him for suggestions and assistance, asking him to receive patients to be sent to him at Hamburgh, or to suggest some one in his confidence who will put his services at the disposal of the Hawaiian Government.

MEDICAL NOTES.

— A new position at the Boston City Hospital has been created; namely, that of ophthalmic and aural interne. An examination of candidates for the term from September 1st next to January 1, 1889, is soon to be held. Candidates must send their names to Dr. E. J. Forster, at the Hospital, secretary of the staff, before August 8th.

— A full report of a lecture on personal identification, by Mr. Francis Galton, appears in *Nature* for June 21st and June 28th. Mr. Galton here presents a practical application of his favorite pursuit, the accurate description of physical and mental peculiarities. He proposes a very ingenious scale of divergencies from the normal for any one feature, and has even invented a mechanical device by which the tedious labor of arranging a large number of such observations can be much abbreviated. The anthropometrical laboratory, at which any one can, under proper restrictions, have a record made of his chief physical measurements, is now open in London, and promises to yield valuable material for this line of study. In connection with this work, Mr. Galton has studied the striations of the human fingers, and is able to corroborate the value attributed to them as a means of identification. These markings are easily obtained, and the variety of them is larger than one would *à priori* imagine. The markings of a finger of Sir William Herschell made in 1860 and 1888 respectively are figured, and show a striking similarity. The difference in age of the two

prints testifies to the wearing of the epidermis. The study is still in its infancy; but the success of such measurements for identifying criminals, as exhibited in France, promises to draw more general notice to the subject. — *Science*, July 27.

NEW YORK.

— The Hudson County Medical Association of New Jersey, which was recently formed to prevent the swindling of members of the profession by patients who are able to pay for attendance, but refuse to do so, met at Taylor's Hotel, Jersey City, on July 25th, and adopted a constitution. It provides for the employment of a collector, in whose hands all questionable bills are to be placed, and who will be allowed twenty-five per cent. on all such bills collected. He is to report those from whom collections cannot be made to the Board of Governors, and the members of the Association are to be warned by circular against trusting them.

— A young man, twenty-two years of age, recently died at the Presbyterian Hospital from hæmorrhage resulting from the extraction of a molar in the right lower jaw.

— A special meeting of the Fifth District Branch of the New York State Medical Association was held at the Sherman House, Babylon, Long Island, on the 31st of July, when papers were read by Drs. J. G. Truax, of New York, William Govan, of Rockland County, and others.

Correspondence.

OVARIOTOMY IN AGE.

LONDON, ENG., July 9, 1888.

MR. EDITOR, — I have read Dr. Billings's letter on this subject with great interest. It will clear up a very old text-book error, and I will do my best to make known the results of his "examination of the *original* records" of the cases to which I referred. I must note, however, that, had I not written the letter which you kindly inserted in your journal of June 7th, the error would have been overlooked.

I entirely agree with Dr. Billings's remarks on the danger of second-hand quotations; yet a second-hand quotation is surely a *record* when it is to be found in the works of standard authors like Olshausen and Peaslee. In Dr. Homans's valuable contribution, published in your journal of May 3d, I find the words: "Dr. Lorini made a *thorough* search without finding any case *recorded* older than seventy-eight years of age." This sentence, written by Dr. Homans, is immediately followed by Dr. Lorini's letter, which refers to "the subject of ovariotomy in women of eighty years and over." The writer has "failed to find a single case *recorded* in any journal, pamphlet or book." Thus, in the above quotations there is nothing about *original* records, of which Dr. Billings speaks. Indeed, that distinguished surgeon admits that it was my letter which led to the "examination of the *original* records" of the cases to which I referred. Again, a *false* record is still a record; hence it is incorrect to imply that "not a single case" of ovariotomy in women of eighty years and over is "*recorded* in any journal, pamphlet or book." Hence, had I not written my letter, several important fallacies would have escaped detection. It led to "the examination of *original* records," and to a specific declaration from Dr. Billings as to the originality of the said records. Dr. Lorini's letter, as I have above shown, said nothing about originality.

Thus, there *are* records of ovariotomy in patients of eighty years and over, but these records are mostly second-hand and inaccurate. Drs. Billings and Lorini, however, undoubtedly overlooked Schröder's cases until my letter led to the examination of "original records." Why does Dr. Billings say "the authority is *merely* a footnote by Schröder in his 'Krankheite der Weiblischen Geschlechts' (*Leipzig*, 1887, page 640), as follows: 'Ich selbst habe Kranke im 79 und 80 jahre mit Glück operirt?'" Why *merely*? Surely we have here an "original record?" Is a footnote of this kind in an original work to be distrusted? There can be no suspicion of misprinted figures (such as led me into error in respect to Miner's case), for the note refers to this passage in the text: "Höhes Alter und Mangelhafter Kräftezustand contraindiciren einfachere Operationen nicht."

I admit my oversight regarding Atlee, and am much indebted to Drs. Billings and Lorini for correction as to the remarkable mistake "eighty-two" for "thirty-two," which I copied from a widely-read American publication. The credit due to Dr. Homans for his successful ovariotomy in a patient aged eighty-two, and to your journal for the "original record" of the case is incontestable.

I remain, dear sir, yours truly,

ALBAN DORAN.

PRIVATE MENTAL SANITARIA AND THE INEBRIETIES.

TO THE EDITOR, — The officers of the Massachusetts Medical Society, in whose hands the paper was by their requirement, caused or permitted to be published in your issue of the 21st ult. an abstract of a paper entitled "Private Mental Sanitaria and the Inebrieties," which paper was read and "discussed" before the recent anniversary meeting of that Society in Boston. The abstract was not shown to the author of the paper, nor was he informed that it was to be made or printed. Whether it was made by the known officers of the Society, by its "experts," or by this journal, does not appear. But the writer is unwilling that his views, as given in the paper in question, should be left with the medical public in the form of the incomplete skeleton that has been given out as above described — minus a vertebra or so and the phalanges indicis. The question really considered is one of some importance. The members who, by invitation of Society officers, spoke in the meeting just after the paper was read, have edited their (as delivered) unwritten remarks, while the author of the paper was not invited by the managers to close the discussion. It is probable, therefore, that the writer whose paper has had so ample an oblique light cast or thrust upon it, will not come into the court of this journal's equity quite outlawed when he solicits a little space. Your readers, it may for your sake be hoped, are a larger audience than that to which the paper was read.

The position taken by the paper regarded the following suggestion or claim: That in the coming legislation of Massachusetts, when it is expected and hoped by all that a special institution for inebriates will be decreed, and hoped that inebriates will be committible by judicial process to such, very desirable institution, that then the existing law which allows the commitment of the inebriate to the public and private lunatic hospitals of the state shall not be abrogated. If all our lunatic hospitals should not treat more than a dozen such patients in a twelvemonth, after the new provision is made, let that dozen be committed by law. It is comparatively easy to manage, to treat, sometimes to cure, such cases, *when committed*. If not committed, and thus restrained under proper authority, system and method, they are perhaps the most difficult sort one has to control, and as hard to cure as a broken bone without a splint. The power, aid and sanction conferred by the commitment procedure ought not to be withdrawn from any who shall be entrusted with the duty, or given the permission, to treat the inebrieties. It may fairly be assumed that the public and private superintendents in lunacy are competent and trustworthy for

the responsibility in question, or, if not, can be put out of the way for cause. Let them not be emasculated while *locum tenentes*.

The importance of this simple and narrow contention will not be the less appreciated when it is known, what the writer is in a position to state, that those who drew the law now in force, whose continuance is herein contended for, did not intend by means of it to ordain the commitment of inebriates to the *private* lunatic hospitals of the State, but to prevent such commitment. The failure of this part of their purpose, through overruling judicial construction of their words has been the fortuitous means of great good to a number of sufferers from addictions already.

The paper narrated that cures of inebriety in its various forms had been attained in the lunatic institutions under the charge, respectively, of our illustrious fellow, Dr. Pliny Earle, and of the writer, one a state, and the other a private hospital. And it would seem that, if under auspices of personal eminence and skill, and other conditions so diverse and separated as these — like alpha and omega, top and bottom — success had been reached, then, through the whole alphabet of varying abilities in superintendents much good work might confidently be expected.

Institutions of all names and functions are but servants of the public weal. They do not exist for the sake of pleasing certain specialists, or to exploit their ideas. It does not follow that an inebriate should not be sent to a lunatic hospital because some one's views of classification will be offended, nor because the patient may tax the hospital officers. It may be that he prefers the lunatic institution of the two, and that he will behave better and gain faster there. If so, and if the superintendent is willing to admit him, why should not the courts have discretion to commit him to a lunatic hospital, even after we have the institution for inebriates?

But it would be a signal injustice and burden to the private hospitals to deprive them of their right to treat inebriates as committed patients. To them are likely to go in the future, as have gone in the past, the superior grade of habituates, more or less willingly, who would not, short of sheer compulsion, enter the pan-Massachusetts inebriate pound. Indeed, the writer must admit that, if he were in need of succor from any addiction, he would, for all the inebriate asylum, prefer to be committed, for example, to the care of that veteran and able alienist, Dr. Merrick Bemis, if he would accept the duty; and like sentiments are very common, as shown by inquiry. These patients have some right of choice.

The private hospitals are entitled to a fair chance to support themselves, for they have no manner of aid in that direction; and, as said already, commitment is a powerful adjuvant to the treatment anywhere. Nor should it be quite forgotten that the inebriate clientèle of the private hospitals includes patients from other States and countries in considerable proportion. The laws of Massachusetts should enable its guest-receiving institutions to take the best possible care of its ailing commorant population, who have come within our borders for the sole purpose of recovering their health.

Shady Lawn Hospital,
17, July, 1888.

[The brief mention of Dr. Thompson's paper in the Report of the Society Meeting to which reference is made, was, of course, the work of the Journal's reporter. — Ed.]

REPORTED MORTALITY FOR THE WEEK ENDING JULY 21, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	963	594	45.98	9.13	32.56	.88	4.51
Philadelphia	1,016,758	456	242	26.84	10.78	19.14	3.74	1.32
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	163	125	26.23	6.71	19.52	3.66	1.22
Baltimore	437,155	261	152	42.18	8.74	39.14	—	.76
Boston	407,024	178	81	25.20	14.08	18.48	1.68	3.92
Cincinnati	325,000	117	—	26.35	9.35	23.80	.85	—
New Orleans	248,000	133	51	25.90	11.10	10.36	—	2.22
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	118	69	35.28	10.08	28.56	2.52	—
Pittsburgh	210,000	85	53	48.72	3.48	37.12	1.16	4.64
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	125,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	23	13	39.15	17 40	30.45	—	—
Charleston	60,145	34	12	23.52	11.76	11.76	2.94	—
Portland	40,000	8	5	12.50	—	—	—	—
Worcester	76,328	29	16	34.48	3.45	31.05	—	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	26	19	46.20	—	38.46	—	7.70
Fall River	61,203	52	35	53.76	7.68	50.00	3.94	—
Lynn	51,467	19	0	—	3.23	—	—	—
Lawrence	40,175	26	15	46.20	11.55	38.46	—	—
Springfield	39,952	31	15	48 45	9.69	35.53	—	12.92
New Bedford	36,298	9	7	44.44	11.11	44.44	—	—
Somerville	33,307	6	3	50.00	16.66	33.33	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	11	2	36.36	27.27	18.18	9.09	9.09
Chelsea	27,552	5	3	20.00	60.00	20.00	—	—
Haverhill	24,979	8	5	12.50	12.50	12.50	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	7	1	14.28	14.28	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	11	3	9.09	18.18	—	—	9.09
Malden	18,932	3	1	33.33	—	—	—	33.33
Fitchburg	17,534	5	3	40.00	—	—	—	—
Waltham	16,651	5	1	20.00	20.00	20.00	—	—
Newburyport	13,839	4	3	25.00	—	25.00	—	—
Northampton	13,419	6	3	16.66	16.66	16.66	—	

Deaths reported 2,703: under five years of age 1,532; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,005, consumption 269, acute lung diseases 127, diarrhœal diseases 757, diphtheria and croup 74, typhoid fever 42, whooping-cough 39, scarlet fever 26, malarial fever 23, measles 21, puerperal fever eight, cerebro-spinal meningitis seven, small-pox three. From whooping-cough, New York 21, New Orleans and Washington four each. Baltimore three, Philadelphia and Pittsburgh two each, St. Louis, Boston and Fitchburg one each. From scarlet fever New York 21, Pittsburgh two, Philadelphia, Portland and Fitchburg one each. From malarial fever, New Orleans eight, New York five, Philadelphia three, St. Louis and Nashville two each, Baltimore, Cincinnati and Charleston one each. From measles New York 16, Baltimore and Lawrence two each, Pittsburgh one. From puerperal fever, New York five, Philadelphia two, Washington one. From cerebro-spinal meningitis, New York two, Philadelphia, New Orleans, Worcester, Somerville and Brockton one each. From small-pox Philadelphia three.

In 23 cities and greater towns of Massachusetts with an estimated population of 1,035,396, the total death-rate for the week was 21.33 against 15.89 and 18.20 for the previous two weeks.

In the 28 greater towns of England and Wales with an estimated population of 9,398,275, for the week ending July 7th, the death-rate was 15.0. Deaths reported 2,710: infants under one year of age 689; diarrhœa 94, whooping-cough 63, diphtheria 53, measles 32, scarlet fever 25, fevers 21, small-pox (Preston seven, Bradford one,) eight.

The death-rates ranged from 9.1 in Brighton to 22.2 in Preston: Birkenhead 11.5; Birmingham 15.4; Bradford 13.4; Hull 13.7; Leeds 15.3; Leicester 11.4; Liverpool 15.8: London 14.8; Manchester 21.0; Nottingham 9.9; Oldham 17.4; Sheffield 14.3; Sunderland 18.2.

In Edinburgh 16.9; Glasgow 18.9; Dublin 20.2.

The meteorological record for the week ending July 21, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
Saturday, July 21, 1888.	Daily Mean.	Daily Mean.	Maximum.	Minimum	8.00 A. M.		8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday,..15	30.085	69.5	75.0	59.2	55.0		55.0	55.0	N.	S.E.	5	8	C.	O.		00
Monday,..16	30.205	63.0	69.5	56.4	70.0		84.0	77.0	N.E.	S.E.	10	3	C.	F.		00
Tuesday,..17	30.270	66.0	65.0	65.5	61.0		65.0	63.0	W.	S.E.	2	8	C.	F.		00
Wednes,..18	30.255	66.0	64.0	65.0	61.0		87.0	74.0	S.E.	S.E.	7	6	O.	F.		00
Thursday, 19	30.120	67.0	68.5	67.5	76.0		88.0	82.0	W.	S W.	8	10	O.	O.	0.40	01
Friday,...20	30.035	70.0	71.5	70.5	90.0		81.0	85.5	S.W.	S.W.	8	13	O.	O.	7.33	.69
Saturday,.21	30.140	68.0	72.0	70.0	76.0		82.0	79.0	W.	S.W.	8	16	F.	O.		00
Mean, the Week.	30.16		69.35	64.89				73.64								

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 27, 1888, TO AUGUST 3, 1888.

MAGRUDER, L. L., surgeon United States Army. Is granted one month leave of absence to take effect on or about August 13, 1888. Paragraph 11, S. O. 171, A. G. O., July 25, 1888.

VICKERY, RICHARD S., major and surgeon, United States Army. Leave of absence extended two months. S. O. 166, A. G. O., July 19, 1888.

WAITE, ROBERT H., surgeon United States Army. Is relieved from duty with Battalion 1st Infantry, at Santa Barbara, Cal., and will proceed to Angel Island, Cal., on public business; on the completion of which he will stand relieved from duty in this department. Paragraph 4, S. O. 43, Headquarters Department of California, July 17, 1888.

MUNN, CURTIS E., assistant surgeon United States Army. Will proceed to Santa Barbara, Cal., and report to commanding officer of the 1st Battalion of Infantry, for duty. Paragraph 3, S. O. 43, Headquarters Department of California, July 17, 1888.

JOHNSON, HENRY, captain and medical store-keeper United States Army. Leave of absence granted for one month and fourteen days, from August 1, 1888. S. O. 170, Headquarters of the Army, A. G. O., July 24, 1888.

JARVIS, N. S., assistant surgeon United States Army. Is granted one month leave of absence on surgeon's certificate of disability, with permission to go beyond the limits of the Department. By Paragraph 1, S. O. 90, Headquarters Department of the Missouri.

COCHRAN, JOHN J., assistant surgeon United States Army. Will proceed to Benicia Barracks, Cal., on public duty, on completion of which he will return to these Headquarters. Paragraph 1, S. O. 44, Headquarters Department of California. San Francisco, Cal., July 20, 1888.

ROBERTSON, REUBEN L, assistant surgeon United States Army. Is relieved from duty at Fort Keogh, Mont. Ty., and will report to the commanding officer at Fort Buford, Dak., for duty at that post, and by letter to the commanding general, Department of Dakota, S. O. 167, A.G. O., July 20, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING JULY 28, 1888.

PENROSE, THOMAS N., surgeon. Detached from Navy Yard, Boston.

PARKER, J. B., surgeon. Ordered to the Navy Yard, Boston.

MCCORMICK, ALBERT MCD. Commissioned assistant surgeon in the Navy.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING JULY 28, 1888.

MURRAY, R. D., surgeon. To proceed to Manatee, Fla., on special duty. July 21, 1888.

WASDIN, EUGENE, passed assistant surgeon. To proceed to Key West, Fla., for temporary duty. July 21, 1888.

FATTIC, J. B., assistant surgeon. To proceed to Memphis, Tenn., for temporary duty. July 28, 1888.

WOODWARD, R. M., assistant surgeon. When relieved, to proceed to Boston, Mass., for duty. July 24, 1888.

GOODWIN, H. T., assistant surgeon. When relieved, to proceed to Cincinnati, Ohio, for duty. July 24, 1888.

GUITERAS, G. M., assistant surgeon. Appointed an assistant surgeon July 23, 1888. Assigned to duty at Marine Hospital, New Orleans, La., July 24, 1888.

HUSSEY, S. H., assistant surgeon. Appointed an assistant surgeon July 23, 1888. Assigned to duty at Marine Hospital, Baltimore, Md., July 24, 1888.

BOOKS AND PAMPHLETS RECEIVED.

Report of the Committee upon Courses of Reading and Study on Works on Civil Government. Massachusetts Society for Promoting Good Citizenship. 1888.

Fourteenth Annual Announcement of the Medical Department, University of Tennessee, Nashville Medical College. 1888.

Original Articles.

CASES OF LAPAROTOMY FOR TUBERCULAR PERITONITIS.[1]

BY A. T. CABOT, A.M., M.D.
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Laparotomy for the cure of tubercular peritonitis is an operation the usefulness of which was discovered by accident, and it is one of the benefits for which we have to thank the ovariotomist.

In the year 1862, Spencer Wells, the Nestor of abdominal surgery, operating for what he believed to be an ovarian tumor, opened an encysted peritoneal effusion, and found the walls of the cavity and the surrounding peritoneum thickly studded with tubercles. Recognizing his mistake, he closed the abdomen after thoroughly removing the fluid, and the patient not only recovered from the operation, but was speedily relieved of all symptoms and evidences of tuberculosis, and lived for more than twenty years afterwards. The significance of this success was not understood at the time, but gradually there accumulated a series of similar accidental cases scattered through the literature of ovariotomy which finally arrested the attention of abdominal surgeons, and seemed to show that peritoneal tuberculosis is often, if not usually, a local process which, if taken in time, may frequently be arrested by an incision into the abdomen.

Besides the array of patients that demonstrate this fact clinically, Hirschfeld has observed a case thus operated upon which subsequently came to autopsy, and it was found that the tubercles had disappeared from the serous coat of the bowels where they had been seen to exist at the previous operation.

The following cases are reported as a contribution to the statistics of this operation, and the second of the two is interesting as being one of the first cases in which the diagnosis of tuberculosis was made before operation, and the incision was made in the hope of bringing the tuberculous process to a standstill. This child was the youngest patient upon whom the operation has as yet been done.

Case I. Minnie B., colored, aged sixteen. Entered the Massachusetts General Hospital June 15, 1886. She was well as far as she knew till two weeks before entrance, when she noticed swelling of the legs. One week later the abdomen was perceptibly swollen, and she began to be troubled with dyspnœa. Examination of the heart showed a soft systolic souffle at the apex. The urine examination was negative.

June 16th. The patient complained of much pain in the upper part of the abdomen, shooting up into the chest. She was greatly prostrated. From this time the abdomen swelled rapidly, and soon became very tense.

June 21st (three weeks from the appearance of the first symptoms of ill-health), Dr. W. L. Richardson tapped her to relieve the distension, and drew off something over three quarts of dark yellow fluid. At this time the abdomen when emptied was felt to contain some ill-defined irregular lumps. After this tapping a circumscribed tumor slowly made its appearance in the middle line below the umbilicus.

September 8th. I saw her for the first time in consultation with Dr. F. C. Shattuck, and found a unilocular collection of fluid rising out of the pelvic cavity into the abdomen as high as the umbilicus. Vaginal examination showed the pelvis pretty well filled by a mass pressing down into the posterior culde-sac, in which fluctuation could not be well made out.

Dr. Shattuck, from previous examinations, had thought the case to be one of tubercular peritonitis, but the development of a single cystic tumor, and the absence of any hardening in any other part of the abdomen made the appearance of things strongly suggest an ovarian cyst which had, in its early growth, been accompanied by ascites. I inclined to this view, and advised an exploratory operation.

The patient was transferred to my ward, and on September 17th, I operated with the usual incision midway between the pubes and umbilicus. It was found impossible to separate the peritoneum from the cyst wall, and an opening was made into the sac. The wall was fully three-quarters of an inch in thickness, and was found to be the greatly thickened peritoneum. A free opening was made, and three quarts of fluid and of a jelly-like material were removed. The cyst did not collapse when emptied, as its walls were everywhere attached to the surrounding parietes. The cavity was packed with iodoform gauze, and a tube was introduced into Douglas's pouch. Over this an antiseptic dressing was applied.

A considerable portion of the cyst wall which was removed was sent to Dr. W. W. Gannett for examination, and he found it filled with typical miliary tubercles.

The subsequent history of this case was that she promptly recovered from the operation, and slowly but surely gained health and strength. The interior of the sac suppurated, and for a long time the discharge was considerable. It slowly diminished, however, and on March 23, 1887 (six months after the operation), she left the hospital with still a discharging sinus, but otherwise in good condition. She went to friends in the Southern States, and was lost sight of.

Case II. Clara T., three years old, entered the Children's Hospital July 25, 1887. There was no history of syphilis. Her mother died of phthisis when she was ten months old. A maternal aunt had also died of the same disease. The child was in the hospital in the winter of 1886 for debility from want of care since her mother's death, and was discharged well in six or eight weeks.

Six months before her second appearance at the hospital a diffused swelling of the abdomen was noticed, which increased slowly but steadily. Her bowels had been loose for about five months, and she had been troubled somewhat with otorrhœa and coryza. At the time of her entrance she was considerably emaciated.

Dr. H. C. Haven, in whose wards she then was, made a careful examination of the heart and lungs, with negative result. The urine showed nothing abnormal. The abdomen was much distended and very tense. It was dull upon percussion everywhere except over the highest point, where it was tympanitic. The cutaneous veins were not distended, and the liver was not appreciably enlarged. The circumference at the umbilicus was at this time twenty-three and one-half inches.

August 5th. I saw her with Dr. Haven, and coincided with his diagnosis of a probably tubercular

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peritonitis. We tapped her and withdrew three pints of greenish-yellow fluid, thereby reducing her girth to twenty-one and one-half inches.

The fluid slowly reaccumulated, and on September 21st her abdomen measured twenty-four and one-half inches. Dr. T. M. Rotch now tapped her again, and withdrew three and a half pints of greenish and ropy fluid.

This time the reaccumulation was even more rapid than before, and it seemed proper to resort to the more decided measure of an incision into the peritoneal cavity.

She was, therefore, transferred to my care, and on October 15th I opened the abdomen by an incision one inch and a half in length. The confirmation of the diagnosis was immediate and complete. Every portion of the peritoneum which could be reached was thickly studded with little round firm bodies projecting everywhere from its surface, and often hanging off with a slender pedicle. So abundant were these that the finger, when introduced into the abdomen, felt as if it were lying in a bag of small shot. The fluid, amounting to a little more than two quarts, was removed as thoroughly as possible, and a small bit of omentum with several tubercles attached was removed for examination. A little piece of rubber drainage-tube was introduced through the abdominal wall to provide for the escape of any fluid that might form in the next day or two, and the wound was closed about it. An antiseptic dressing was applied.

At the end of twenty-four hours it was found that no fluid was escaping through the tube, although a little leaked away around it. The tube was removed. Everything went well, and at the end of ten days the stitches were all removed, the wound being closed down to a granulating spot where the tube had lain.

November 3d (sixteen days after the operation), the child developed a sharp attack of bronchitis, which ran into broncho-pneumonia, and for a number of days she was dangerously ill, but slowly she got better, and in the course of the next month the lungs entirely cleared up, relieving us of the fear that tuberculosis might be developing itself there.

November 22d the wound broke down slightly, and presently discharged a small silk ligature, the one we had tied about the pedicle of the bit of omentum that was removed.

From this time the child steadily improved in flesh and strength, and regained the ruddy appearance of a healthy girl of her age. There was never any tendency to a return of the ascites, nor was there any hardness or tenderness to be detected in the abdomen.

The question as to how a simple incision into a peritoneal cavity filled with ascitic fluid, and studded with tubercles, works an arrest and apparent disappearance of the tubercular process is one of the hitherto unexplained enigmas of surgery. The observed facts are as yet too few to serve as the basis of any well-grounded theory on the subject.

Hirschfeld's observations show that the tubercles actually disappear from surfaces where they had been shown to exist, but we have not yet had the opportunity of sufficiently examining the conditions which accompany the cure of tubercular peritonitis.

In our endeavor to understand it, however, we should bear in mind certain characteristics of the tubercular process which are well observed in other places. In local tuberculosis of the joints or bones we know that in certain cases the disease undergoes a spontaneous cure, or, at least, becomes quiescent, and does not again appear during the life of the individual. This process of retrogression is greatly favored by securing for the diseased part absolute rest and freedom from irritation, and by improving the nutrition of the patient through general measures, hygienic and medicinal.

When we get an opportunity to examine a joint which has suffered from tuberculosis and has recovered, we find the parts thickened and changed into fibrous tissue, with here and there cheesy or calcareous masses surrounded by a firm capsule. The process which has brought the tuberculosis to a standstill is analogous to that which we are familiar with around a cancerous growth. In each case the connective tissue about the morbid new growth is stimulated to increased activity, as is shown by the zone of new cells which surrounds both the tubercle and the cancer. These cells may finally develop into connective tissue fibres which surround and encapsulate the morbid new formation, and this fibrous tissue may finally, by its contraction, so press upon and interfere with the nutrition of the new growth as to lead to its death and disappearance by a process of fatty degeneration. This is the course of events so commonly observed in the scirrhous or hardening cancers, and also well illustrated in a tuberculous process developing in the midst of connective tissue.

It rarely happens that the vigorous growth of a cancer is definitively arrested by this effort of the surrounding tissues; for while it is held in check in one direction, it extends itself in many others, and breaks through the comparatively feeble barriers thus opposed to its progress. In tuberculosis, however, we have a process of much less vitality, and which, occurring in younger subjects, is often successfully hemmed in and destroyed by the healthy tissues about it.

Now, in the case of a tuberculosis of a serous membrane, the morbid growth takes place under somewhat different conditions, especially when an effusion has distended the cavity. Here the tubercles form upon a surface from which they project. They are in contact with the healthy tissues on but one side. On the other they are bathed in a serous fluid which favors rather than hinders their growth. They often become pediculated, and hang off into the serum, almost detaching themselves from the membrane in which they originated. Under these circumstances it is easily seen that the tissues have but little chance to surround the tubercles by a zone of fibrous tissue, and so bring about their destruction.

Turning now to a consideration of the conditions under which a cure has been brought about by surgical interference, we find reports of cases in which simple tapping and drawing off the fluid has been followed by an apparent arrest of the disease. These cases are, however, very exceptional, and leave us in some doubt as to the correctness of the diagnosis. The more radical procedure of making an opening into the abdomen and thoroughly evacuating the ascitic fluid has been followed by a very much greater degree of success.

Some operators have sprinkled the abdominal cavity with iodoform; others have washed it out with corrosive sublimate solution, or with simple water; others again have used carbolic acid in an antiseptic

wash. All of these measures have been followed by about the same degree of success, and we are led to conclude that the special method of operating or of subsequent treatment of the wound or peritoneum is of no special importance, but that the one thing which is of importance is the thorough evacuation of the fluid, and it does not much matter how it is done, provided it is complete.

The difficulty of entirely removing an ascitic fluid through a canula seems sufficient to explain the rare occurrence of a cure after the imperfect evacuation of a simple tapping.

Dr. Van de Warker, in an interesting article in the *American Journal of Obstetrics* for September, 1887, points out two ways in which the accumulation of ascitic fluid may, perhaps, act to intensify the morbid process: first, through its mechanical irritation by pressure, or by some unexplained irritating quality in its constituents; and, secondly, by acting as a medium for the propagation and distribution of the tubercular germs.

Granting the effect that the effusion may have in assisting the spread of the process in either or both of these ways, we can see how the removal of the fluid might somewhat hinder the extension of the disease, but we still have to explain the effect that removing the effusion has in causing an actual disappearance of tubercles already existing.

Upon this point Dr. Van de Warker says: "The irritated peritoneum is given a rest and allows of a process that belongs *per se* to tuberculosis, namely, the thickening and induration of the surfaces — an incapsulation — and which, Hegar suggests, may be a stage in spontaneous cure."

It seems to me that this suggestion of Hegar's is of the greatest interest, and that it is probable that the rest afforded to the peritoneum is of importance in allowing it to set up its process of induration, and so to resist the advance of the tubercles, but we may go a step farther and appreciate another effect of the removal of the effusion which must, I think, play a very great part in bringing about the disappearance of the tubercular process.

As has been said, the tubercles upon the peritoneum are free upon one side, and frequently even hang off from the surface so as to be almost detached from it. Now, under these circumstances, the tissues have no opportunity to surround them with a zone of young cells, which shall become fibres, and so shut them in, encapsulate and destroy them. This condition exists as long as the abdomen is filled with fluid and the peritonial surfaces are separated.

When, however, the fluid is wholly removed, and the peritoneal surfaces fall together and acquire adhesions, the tubercles are then shut in between the coils of intestine, the omentum and the abdominal wall. They are thus surrounded by tissues in a high degree of activity, which can now throw around them the limiting zone of young cells, and eventually fibrous tissue, which, if the tubercular process is not too far advanced, may effectually resist it, and cause it to retrograde.

Lastly, in regard to the method of operating. As has been said, the simple evacuation of the fluid is all that we have to accomplish, and the wound may then be closed as after any laparotomy.

In both of my cases I used a drainage-tube, but I shall not do so again. According to reported observations, even so large and thick-walled a cavity as existed in my first case may be safely sewed up, with good hopes of arresting the tubercular process, and by discarding the drainage-tube we avoid the formation of a fistula with the long suppuration, which was a troublesome feature in this case.

In the discussion which followed the reading of the above paper, DR. ROTCH made the following remarks regarding Dr. Cabot's second case:

On taking charge of the medical wards of the hospital in September, I found in one of the beds this child, three years old, who has been presented to the inspection of the Society to-night, apparently well, and with no remains of the disease from which she was then suffering.

On physical examination, I could detect nothing abnormal in the chest: the abdomen was found to be uniformly distended with fluid. The child was losing in weight and appetite. There seemed to be no doubt but that it was a case of tubercular peritonitis; and, after observing the child for several days, I aspirated the abdomen, but did not succeed in completely emptying the abdominal cavity. The fluid quickly reaccumulated, and, from my experience with similar cases, I considered that the child would gradually grow weaker and die unless some radical procedure should be adopted. I, therefore, transferred the case to Dr. Cabot for operation.

I have nothing to add to Dr. Cabot's excellent review of the subject and his practical, common-sense remarks and suggestions as to the process of repair which takes place in the cases of recovery; but I wish to bear testimony to the confidence in antiseptic surgery displayed by Dr. Cabot in operating on this young child, the youngest laparotomy, as far as I can learn, which has been done for tubercular peritonitis, and which will mark a decided era in the treatment of the disease, for it hands it over from the domain of medicine to that of surgery. Any one who will recall the usual picture of children with tubercular peritonitis as they sit in our wards, treated with various drugs according to the fancy of the attending physician, and occasionally tapped for temporary relief from urgent mechanical symptoms, — in the large majority of cases, however, only waiting for the fatal issue, — will, I think, acknowledge that a great advance has been made towards saving life, and that great credit should be given to the surgeon who accomplishes such favorable results.

We may hear of occasional cases where tapping has produced a cure, but they are exceptional, as are the cases of empyema which are at times reported as being cured by one or two aspirations, the rule being that a free incision is the alternative to a fatal issue. And since the abdominal incision, under antiseptic precautions, is being more and more proved to be a harmless procedure, we certainly should not wait for further developments when our diagnosis is once made, and in waiting run the risk of the morbid process arriving at that period of growth where no treatment will be of any avail.

If the gentlemen here present could have seen this now healthy child as it appeared in my wards, losing ground every day, looked upon by me as a hopeless case, and, as I said before, merely waiting for death, they certainly would agree with me in at least designating the operation and its result as brilliant.

THE DETECTION OF MORPHINE IN THE URINE AS A MEANS OF DIAGNOSIS.[1]

BY BENNETT F. DAVENPORT, M.D., BOSTON.

IT has continued to this day a disputed question, in spite of the many exact accounts of instances when it had been done, whether the presence of morphine could actually be determined in the animal organism, and how far it could accurately be done. There has been two opposite opinions held upon the subject. According to the one, morphia, when once absorbed into the tissues, became decomposed, and could, therefore, no longer be determined as such, while the others held that it was excreted in the urine still undecomposed.

The first method for the determination of the morphine originated with Lassaigne in 1824. He, however, was enabled to detect but traces of it in the blood of horses into whose jugular vein he had injected it in large doses. Christison, in 1831, and Taylor in 1862, sought in vain to detect morphine. Clocka, in 1866, could detect no trace of morphine in the blood of one with the opium habit. Erdman, in 1862, failed to detect morphine in the urine of several rabbits that he had poisoned with morphia. Instances of such negative results could be very numerously mentioned. They are, however, opposed by the positive results obtained by Orfila in 1839, Gscheidler in 1869, and notably by Kauzmann and Dragendorff in 1868. These last two were enabled by their method of examination to detect the presence of morphine in the urine of those who had been poisoned by it, every time, without exception. Landsberg, however, who reviewed their method, was not able to confirm their results, for he failed in the most of his cases, and Wislicenus was not more fortunate.

Burkart, who investigated this subject still later, 1882, made use of a method combining those of Dragendorff, Kauzmann, Landsberg, and Wislicenus. His results, obtained from excreted morphine and mixtures of urine and morphine of like amount, and both injected into rabbits, made it to appear probable that the uncertain results obtained by the last two were best to be explained by the theory that either but a part of the morphine absorbed was excreted unchanged, or else that, while it was not changed as to its character, its intensity of action as a poison was. He in many cases found that none of the alkaloid was excreted unchanged into the urine. In other cases but a trace, all the rest being so changed as to prevent the usual modes of detection.

Later, Marmé, who was confirmed by Warnecke, showed that some morphine did pass unchanged into the urine, and he later devised elaborate methods for demonstrating the presence of morphine in the various fluids and tissues of the body under all possible circumstances. In 1884, Dragendorff, assisted by Schneider, published his investigations concerning the correctness of Burkart's morphine decomposition product being contained in the urine, and as to how large a portion of the morphine consumed by one having the opium habit was again excreted in the urine.

Dragendorff's method of separating morphine from the urine was as follows: The urine, without any concentration, is made slightly acid by a few drops of dilute sulphuric acid, and then shaken out with one-fifth one-third its volume of amylic alcohol during five minutes. It is then set one side to separate as clear as possible. This way of shaking out with fresh amylic alcohol is repeated four to five times to remove as much of the urea as possible. The fluid is then made slightly alkaline with ammonia, and the morphine itself separated by being shaken out in hot amylic alcohol. This solution in the alcohol must be most carefully freed from any of the adhering urine by settling and filtration, so that upon its evaporation no droplets of watery fluid may be formed. Repeated washings of the alcoholic morphine with water cannot be used when there is but a trace of morphine present. By his method, he claims that 0.01 grm. morphine in 300 cc. urine can be well recovered.

Of the reactions for the determining of the presence of morphine in this urine extraction, the Fröhde, that is, concent. sulphuric acid containing molybdium is the best, but it is not alone sufficient, as other alkaloidal substances give a similar red-violet coloration. Dragendorff denies the assertion of Burkart that pure morphine must give a blue-violet color with this reagent. Although pure morphine muriate does give the blue-violet color, yet this same salt, when recovered as a free alkaloid by the Dragendorff method out of a urine, will give a red-violet color. Therefore, Burkart, when from the urine of a morphine-eater he obtained an alkaloid that gave a blue-violet with Fröhde's reagent, ought to have doubted its being pure morphine, but he ought to have considered it as an unaltered morphine when it gave the red-violet reaction.

To Burkart's claim that the red-violet coloring material which he obtained from the urine of a morphine-eater was neither a decomposition product nor a urine compound of morphine, but an independent constituent of urine, and to his argument in support of this that he had obtained a beautiful red-violet color from the urine of a morphine-eater who had been taking it for ten days, Dragendorff replies that he has never been able to obtain from the urine of one who had not been taking morphine a constituent which either had an alkaloidal reaction or shared in the Fröhde's reaction of morphine. The blue reaction of iron chloride with morphine is of importance because that it separates morphine from all the other alkaloids which give a reaction with Fröhde's reagent similar to morphine. It is well known that the iron test requires certain special conditions: considerable purity of alkaloid, no excess of acid or reagent, and the alkaloid to be present in considerable quantity.

The experiments of Schneider confirmed the opinion of Hangmann and Marmé, that with doses of from 0.01 to 0.03 grm., morphine taken either by the mouth or under the skin, it could with certainty be discovered in the urine. His cases were those of an old woman, who had for fifteen years been a morphine-eater. At this time her doses were 0.24 to 0.36 acetate daily by the mouth. A student who was taking 0.48 grm. muriate daily, and a woman who was taking 0.024 grm. of the same daily subcutaneously. In all these cases positive results were obtained by the last-mentioned; that is, Fröhde's, the iron chloride, and also by the Huseman's reaction. A further evidence that the urine, after the use of morphine, contained that actual alkaloid, is the experiment of Burkart, who obtained from the twenty-four hours' urine of one using 1.3 to 1.55 grms. of morphine

[1] Read before the Boston Society for Medical Observation, May 7, 1888.

muriate a day an alkaloid which, injected subcutaneously into dogs and rabbits, developed the symptoms of severe morphine-poisoning. It has now been determined that from the urine of men and animals who have taken morphine either by the mouth or subcutaneously, an alkaloid can be obtained which has a crystalline form, a solubility of chemical reactions, and a physiological working like to morphine. The question whether it is actually unaltered morphine, or a decomposition product of the same, can only be answered when it has been obtained in a sufficient quantity and purity to make an ultimate elemental analysis of it possible, and for the determination of its other properties.

Among others, Scheibe and Eliassor, in 1882, have each proposed, as they claim, improvements in the Dragendorff method of separation, the former using an ethereal alcohol as his last solvent, and the latter acetic ether, with a previous precipitation of some of the constituents of the urine with lead acetate. In this last method, an intense gray or green-blue color is sometimes produced by the Fröhde's reagent, which he held to be a decomposition product of the morphine. Notta and Lugan have proposed a method similar to that of Eliassor, and he finds that the kidneys, when in their normal condition, excrete a portion of the morphine unchanged. Oxydi morphine is the name which Marmé and others have given to the form of morphine formed, as he claims, in the system in cases of chronic morphine-poisoning, and its reactions differ from morphine in certain particulars with the more generally used morphine reagents, all which he has set forth in his article, published in 1885, with most minute details. In this connection, it is of interest to note that a simple water solution of morphine seems to change partially in time into apomorphia, thus explaining, may be, the nausea, said to be more marked when such an old solution has been used. Furthermore, the possible influence of ptomaines upon the chemical reactions of morphine are to be considered in a medico-legal case where the sample of the alkaloid to be identified is obtained from the liver, for instance, and also from the urine after death. According to the researches of Hilger and Tamba, which were published in 1886, morphine in presence of ptomaines can be identified through its sugar and sulphuric acid reactions, whereby the violet color is sharply induced; further, also, by its like reaction with concentrated sulphuric acid on evaporation in the water-bath, with the later addition of hydrochloric acid, etc. Iodic acid may not be reduced by the morphine itself in the presence of more than a trace of ptomaine, for many ptomaines have of themselves a strong reducing action. All the other usual tests for morphine are not serviceable in the presence of ptomaines. They found, however, that boiling ether dissolved out the ptomaines from slightly acid solutions, especially if it had been evaporated upon gypsum. In this the morphine would remain undissolved. Also that in ethereal solutions of alkaloids and ptomaines, the addition of ether saturated with oxalic acid would, on long standing, precipitate out the alkaloid as a crystalline oxalate, while the ptomaine remained wholly in solution. Furthermore, Bouchard has determined that a healthy adult man produces upon an average in twenty-four hours enough urine poison to cause death in an animal weighing 46.5 % as much as himself, if it be injected into its circulation.

Dr. Harley, in his "Old Vegetable Neurotics," says that during the action of opium, so long as any hypnotic and anæsthetic influence remain, the excretions are retarded; but when simply hypnotic and stimulant, or when the person becomes habituated to its use, the secretions and excretions are abundant and free. Dr. Anstie, in his "Stimulants and Narcotics," conjectures that in fatal cases there may be a condition of hasty and profuse shedding of the epithelial cells, such as occurs in some forms of fever, and which is usually associated with diminished secretion. Dr. Edes, in his "Therapeutic Handbook," mentions the fact that in severe opium-poisoning the urine may contain albumen and casts. Professor Huseman, in his "Toxikologie," however, claims that there is simply a retention of urine in the bladder, due to diminished sensibility, rather than any diminished secretion, for the bladder is usually found to be distended in fatal cases; that a desire to void it has usually been felt, which could not be satisfied. Headland, in his "Action of Medicines," also asserts that opium scarcely, if at all, lessens the secretion of the urine.

The experiments of Dragendorff and Kaufman showed the following: In a cat which received into its stomach a dose of 0.183 grm. morph. sulph. dissolved in water, the urine passed ten minutes later did not yet contain any morphine. In a kitten, two hours after a subcutaneous injection of 0.03 grm., it was found in abundance. In a medium-size dog, four and a half hours after a stomach dose of 0.31, it was found in large quantities. After an injection of 0.135 in the thigh of a cat, the elimination was not yet completed after thirty-six hours. In a cat which received 0.03 in a gelatine capsule, it was fully complete in fifty-two hours. A large shepherd dog, after several large daily doses in capsules, in fifty-four hours after its last dose of 2.007, had no longer any in its urine. Later, after a dose of 2.48, it still had some at the end of eighty-four hours, but not at the end of ninety-four. A medium-size dog taking 0.31 in solution in stomach had it still in the urine at the end of forty hours, but that passed three times during the next twelve hours had none. The same dog, after a like dose, but subcutaneous, had no alkaloid in the urine at the end of fifty hours. A man who took one-sixth grm. had it in his urine during twelve hours, but not after that. Dr. Dragendorff found that the Fröhde's reagent would show its reaction in the presence of only 0.000,005 grm. alkaloid, the Huseman test with only 0.000,01, while the iron chloride test required not less than one part morphine in five thousand of the solution tested.

The possibility of being able to detect with certainty the presence of morphine in the urine of one who has taken the alkaloid in but the ordinary medicinal dose is of great practical utility in the detection of the opium habit, since, as is well known, the word of those addicted is not well to be relied upon in this particular; also in hospital practice for the detection of relapses in those who have been under treatment, but have so far recovered as to be trusted with some outside liberty.

I have recently had occasion to examine five samples of urine for Dr. Goldsmith, the Superintendent of the Butler Hospital at Providence. Two were from patients who were thought to be cured, and had been allowed to go outside before their final discharge. As morphine was found in neither of them, they were, therefore, discharged from the hospital. Another

was from a case which had been known to take one-half to one and one-half grains morphine daily for some time, but had omitted it for two days, had then taken one-half grain. Beginning thirty-six hours after this last dose, the next twenty-four hours' urine gave no reaction for morphine. The next two samples were from patients taking one-eighth of a grain three times daily. In each of these morphine was found. It is, of course, needless to say that the probability of the presence or absence of morphine was unknown before it was reported upon. These are simply examples of within what limits of time and dose I have been able to detect its presence in the urine secreted.

CLINICAL NOTES OF A CASE OF PERITYPHLITIS; LAPAROTOMY THIRTY-TWO HOURS AFTER THE BEGINNING OF THE ATTACK; DEATH ON THE THIRTY-EIGHTH DAY.[1]

BY S. E. WYMAN, M.D. CAMBRIDGE, MASS.

IT has seemed to me to be desirable to place upon record the following notes, as a contribution to the study of operative interference in cases of perityphlitis.

It need not be said that it is a matter of deep regret that the result should have been unfavorable, when everything seemed so auspicious at the time of the operation, which was not deferred until the patient's strength had been exhausted by protracted suffering. I have never answered to my own satisfaction the question, "Why must he have died?"

July 21, 1887. C. M. R., male, a native American, has never been strong; is fourteen years old. From the second to the eighth day of life "he vomited black stuff, as nearly like blood as could be." He began to grow fleshy when nine years old, and is now a pale, anæmic, fat boy, weighing at present 145 pounds. He has never cared to do as much running as his schoolfellows did; has suffered considerably from indigestion, and, during the past two years, has had several attacks very similar to the present one, having had three within the past four weeks. Yesterday ate watermelon and blackberries, and, at three o'clock, morning, was awakened with severe abdominal pain in umbilical and right iliac region. Present attack of pain very severe, causing him to scream and toss about; was treated by his parents by hot local applications until 7 A. M., at which time I saw him and obtained his history. The patient has vomited twice, small quantity, liquid contents of the stomach. Expression is anxious; abdominal tenderness great, especially in umbilical and right iliac region. No tympanites. Considerable dulness on percussion in right iliac region. Decubitus dorsal, with knees drawn up. Pulse, 96, temperature 98.4° (mouth). He was ordered morphia with belladonna sufficient to control pain, hot applications to the bowels, and liquid diet. Was seen at 10.45 A. M., when it was learned that the abdominal pain was greater and more general, and tympanites had begun to show itself. Has vomited once. Peristalsis not so active, and abdominal walls kept motionless during respiration. Pulse 90, temperature 98.6°. 3.15 P. M. Has been kept quiet, with almost no complaint of pain, and much less tenderness, by the morphia. His face is flushed. Pulse, 90–120, temperature 100° (mouth). Pupils not contracted. 7.12 P. M. Hourly administration of morphia has kept him free from pain and vomiting. Urine, scanty in amount, passed with some difficulty. No change in local symptoms. He has been inclined all day to lie on his right side, and twice has been found sleeping in this position, although he thinks it causes more tenderness in right iliac region. Pulse, 112, temperature, 100.8°.

July 22; 6.45 A. M. Passed a fairly comfortable night, and complained less of pain. There has been no vomiting; no dejection; urine rather scanty; less abdominal tenderness generally, as well as in right iliac fossa. Pulse 108, temperature 99.6° (mouth). 10.45 A. M. Was seen in consultation by Drs. Marcy and Nelson, who concurred in the diagnosis, and advised operative interference. Ether was administered and laparotomy was performed by Dr. H. O. Marcy, whose notes I take the liberty of copying. The operation lasted more than ninety minutes.

"When under ether there was to be clearly outlined under the thick abdominal wall a firm resisting thickening in the right iliac quarter. An incision was made five inches long, through an inch or more of fat, and the muscles divided. The peritoneum was adherent over a space of about two inches to the omentum and surrounding parts, and the adhesions were separated with some difficulty and hæmorrhage. The head of the colon, with the appendix, was imbedded in a thick, organized mass, and firmly adherent to the abdominal wall. The adhesions were broken up with much difficulty, and the hæmorrhage was quite troublesome. The bleeding, adherent omentum was sewed through by the double stitch with catgut, and excised. The intestine above and below was found healthy. It was clearly determined that there was no suppuration about the appendix. The plastic mass was too firmly adherent and vascular to be safely removed except a small portion between the head of the colon and the abdominal wall. The bleeding points were secured and the wound closed, the peritoneum with a fine continuous animal suture, and the external wound under the mercuric bichloride solution irrigation."

He came out of his ether well, vomited at 2.30 P.M. Pulse, 132, temperature 98.4° (ax.).

℞ Is to have morphia by suppository, p. r. n.

9.30 P. M. Has vomited once or twice, and been made comfortable by morphia suppositories. Is fed by enemata of

Murdock's Liquid Food	℥ ss.
Whiskey	℥ ss.
Water, q. s.	once in four hours.

Pulse 126–133, temperature 98.4° (ax.), respiration 18. No urine passed.

July 23; 7 A. M. Good night. Urine passed twice. Moderate amount of morphia given. Tongue moist and clean. Pulse 128, regular, temperature 98.4°, respiration 18. 9.45 P. M. Has vomited four times. Urine passed once. Has complained of soreness in region of wound. No pain. Has been very thirsty. Pulse 126, temperature 101° (m.), respiration 20.

July 24th; 7.30 A. M. Required morphia once in three hours. Vomited three times during night. Passed quite a large amount of urine. Flatus per anum first time this morning. Decubitus dorsal, knees erect in the form of a tent. Hands and arms over his head. Pulse 120, temperature 99.2°, respiration 20.

[1] Read before the Middlesex South District Medical Society, January 18, 1888.

3.30 P. M. Has vomited four times. Great thirst. Little complaint of pain. Passes much flatus. Has begun to take soda water ʒii at a time. Seen by Dr. Marcy at 4.30 P. M. The dressing of the wound was removed down to the protective. Wound looks well. No redness. No discoloration. The veins at one and a half and two inches distant from the edges seem more prominent than elsewhere. No tenderness on moderate pressure in the vicinity of the wound.

℞ Seidlitz powder . . . . . one-eighth, hourly.

9.30 P. M. Desire for a stool, and was on bed-pan at visit without accomplishing anything.

July 25th; fifth day; 7 A. M. Comfortable night. More sleep. Several ineffectual attempts at a stool. Flatus passed freely. Pulse 113–116, temperature 99.2°. 9.30 P. M. Has taken a small quantity of ice cream three times; vomited the last. Pulse 114, temperature 100°, respiration 18.

July 26th; sixth day; 7 A. M. Excellent night's sleep. Vomited once. Pulse 98, respiration 16, temperature 99°. 9.30 P. M. Has had a comfortable day. Vomited once. Pulse 95, respiration 18, temperature 99°.

July 27th; seventh day. Slept well.

℞ Elaterii pil., one-thirtieth grain once in two hours.

Vomited twice. Complains of fulness in the whole alimentary track. Pulse 90, respiration 16, temperature 98.4°. Afternoon. Moves from side to side as if in health. No dejection. Vomited four times. Less discomfort in every way. Has required less morphia. Pulse 88, respiration 16, temperature 98.4°.

July 28th; eighth day; 7 A. M. Good night's sleep. Vomited once. Face flushed. Pulse 90, respiration 18, temperature 99°. Afternoon. Pill elaterii has been increased to gr. $\frac{1}{15}$ without procuring any stool. Dr. Marcy saw him this afternoon, and removed suture from the external wound, whose edges, with the exception of a short space at the inner and lower angle, were firmly united. Iodoform with wool externally. Pulse 105, respiration 16, temperature 99.5°.

July 29th; ninth day; 10 A. M. Vomited five times. No dejection. Two enemata of soap suds were returned discolored by Murdock's food. Pulse 103, temperature, 98.4°. Afternoon. No dejection. Pulse 104, temperature 98.4°.

July 30th; tenth day; 1.30 P. M. Pulse 66, temperature 98.4. 7.30 P. M. Pulse 78, temperature 98.4°. Vomited once.

July 31st; eleventh day; morning. Slept well. No dejection. Vomited once. Has taken spoonful doses of beef tea by mouth. Bowels flat. No pain. No tenderness. Pulse 76, temperature 99.6°. 5 P. M. Comfortable day. Enjoys small doses of blanc mange with milk and sugar by mouth. Vomited three times. Slight fæcal dejection after enema. Pulse 90, temperature 99.2°.

August 1st; twelfth day; morning. Excellent night's sleep, without any suppository. No pain. No vomiting. Pulse 78, temperature 98.2°. Afternoon. Comfortable. Had a large, well-formed, natural dejection at noon. Pulse 72, temperature 99°.

August 2d; thirteenth day; morning. Good night's sleep, without pain or vomiting. Has eaten some blanc mange and a little soft-boiled egg. Natural dejection. Pulse 84, temperature 98.6°. Afternoon. Vomited four times contents of stomach. Pulse 84, temperature 98.4°.

August 3d; fourteenth day; morning. Good night's sleep, without pain. One suppository at 6 P. M. Pulse 70, temperature 98.3°. Afternoon. Perfectly comfortable. Dejection after enema at 2.30 P. M. Pulse 70, temperature 98.3°.

August 4th; fifteenth day. Comfortable. Wound is healing. Some thin bloody discharge flows from upper end of wound. Etherial solution of iodoform and collodion applied. Pulse 76, temperature 98.5°. Afternoon. Doing well, with the exception of a little fulness. Pulse 76, temperature 98.4°.

August 5th; sixteenth day; 10.30 A. M. Had a comfortable night's sleep. Pulse 82, temperature 98.4°. Afternoon. During the day some pain in the wound from which there has been quite a free discharge. Vomited once. Some headache. Some tympanites. Pulse 80, temperature 98.2°.

August 6th; seventeenth day; morning. Comfortable night. Complains of some fulness. Pulse 82, temperature 98°. Afternoon. Comfortable day. No pain. No dejection.

℞ Nuc. Vomic. . . . . ¼ grain.

Hungry to-night. Pulse 72, temperature 99.2°.

August 7th; eighteenth day; morning. Slept well. No pain. No vomiting. Dejection at time of visit. Ate some soft oatmeal this morning. Pulse 80, temperature 98.4°.

August 8th; nineteenth day; morning. Best day since his illness. Three dejections, one at 4 P. M. and two this morning. Has good appetite. Pulse 70, temperature 98°.

August 9th; twentieth day; morning. Perfectly comfortable, without vomiting. Dejection yesterday afternoon. Marked appetite. Pulse 68, temperature 98.4°.

August 10th; twenty-first day; morning. Comfortable. Ate lamb with broth, baked potato, bread and oatmeal. Pulse 72, temperature 98.4°.

August 11th; twenty-second day; morning. Perfectly comfortable. Two large and well-formed dejections yesterday. Wound dry. Pulse 72, temperature 98.7°.

August 12th; twenty-third day; afternoon. Comfortable. Has been sitting up in bed nearly all the morning. Pulse 80, temperature 98.2°.

August 13th; twenty-fourth day. Good night. Appetite excellent. Sitting up eating his breakfast at time of visit. Wound is practically closed. No discharge. Pulse 96, temperature 98.4°.

August 14th; twenty-fifth day; afternoon. Has had a serious set back. Sat up nearly half the afternoon. At about 4 P. M., after enema, had a good dejection, and between 10–11 P. M. and 2–3 A. M. Complained of some pain in his bowels at 10 P. M., which grew very severe, and was located in epigastric and left iliac region. Vomited at about 12 o'clock, became quiet at about 2 o'clock, but vomited again at 3 A. M. Has taken suppositories, p. r. n. Vomited again this morning. Now has only soreness in left iliac and epigastric regions. No tympanites. Peristalsis not heard. Slight coating on the tongue. Was seen by Dr. Nichols, who reported, pulse 144, temperature 100.6°. Now, pulse 136, temperature 100.4°. Urine examined and found to be normal. 5.30 P. M. Has slept some. Vomited large quantity of bilious

matter, causing him to cough, and giving pain in left iliac region. Pulse 132–137, temperature 100.8°. 9.30 P. M. Slept for some time. No pain. No vomiting. Pulse 135, temperature 100.1°.

August 15th; twenty-sixth day; morning. Slept quite well. No vomiting. No dejection. Less soreness of the bowels. Some tenderness in left iliac region; none elsewhere. No tympanites. Peristalsis heard slightly. Pulse 132, temperature 100.2°. Afternoon. Has vomited four times during day. Less tenderness. Color good. Thirst less. Abdomen moves with respiration. Pulse 132, temperature 99.8°.

August 16th; twenty-seventh day; morning. Comfortable night, without vomiting or dejection. Complains of soreness in left iliac region only when he moves. Pulse 112, temperature 98.8°. Afternoon. Comfortable, but has a full feeling. Pulse 109, temperature 99.4°.

August 17th; twenty-eighth day; morning. Comfortable. No pain. Vomited twice. Feels hungry. Face bright. Tongue clean. No tenderness. No tympanites. Pulse 99, temperature 99.1°. Afternoon. Comfortable in every way. Pulse 100, temperature 98.8°.

August 18th; twenty-ninth day; morning. Has vomited eight to ten times. Has slept since 12 o'clock. No pain. No dejection. Bowels soft. No tenderness except in right iliac fossa on deep pressure, where there is a little dulness on percussion. Pulse 99, temperature 98.6°. Afternoon. Has had an enema of epsom salts without any dejection. Looks pale and sick. Pulse 108, temperature 98.6°.

August 19th; thirtieth day; morning. No improvement. No dejection. Has vomited several times, and gagged many times without raising anything. Hiccoughed last night after vomiting. Pulse, 106, temperature 98°. Afternoon. Had a dejection after an enema at 11 A. M., and a small natural dejection at 3 P. M. Pulse 96, temperature 98.3°.

August 20th; thirty-first day; morning. Good night. Vomited a little several times. No pain. No dejection. There is still a little tumor in the right iliac region. Pulse 89, temperature 98.2°. Afternoon. Good dejection after an enema. Vomited a little. Has been sleeping for three hours.

August 23d; thirty-fourth day; morning. Has grown much worse since the 21st, when vomiting began at 11 A. M., and has continued ever since.

Owing to my own illness he was attended during the remaining days of his life by Drs. Nichols and Driver. The same symptoms continued until the close of the scene, the stomach refusing to retain any nourishment, notwithstanding all sorts of medication were tried.

He died on August 27th, the thirty-eighth day of his illness.

The autopsy was made by Drs. Driver, Whittemore and C. B. Wellington within twenty-four hours after death. Only the abdomen was opened. The peritoneum was normal everywhere, except for a little blush directly over the site of the wound made by the operation. There were a few very delicate adhesions of recent date passing from the wound to the cæcum, and the corner of the omentum bound the cæcum to a slight extent to the iliac fossa. On careful examination only a very rudimentary appendix vermiformis could be found. On opening the intestines the rectum was found empty, the sigmoid flexure well marked, having almost a supplementary curve. At the junction of the transverse and ascending colon a small amount of fæcal matter was found. In the cæcum itself a roundish mass of fæces was found about the size of a pullet's egg; otherwise, everything was normal.

REPORT OF PROGRESS IN GYNECOLOGY,

BY F. H. DAVENPORT, M.D.,
Assistant in Gynecology, Harvard Medical College.

BICHLORIDE OF MERCURY IN CIRCUMUTERINE INFLAMMATIONS.

DR. H. N. VINEBERG [1] in a paper on this subject describes that class of cases where we find on examination some loss of mobility of the uterus, and to one or other side or behind a fulness or induration which is moderately sensitive. The ovaries are found apparently enlarged and extremely tender. On one side of the uterus, usually the left, an oblong irregular mass is not infrequently detected, which is commonly looked upon as a dilated tube, but which the author thinks is as often the sigmoid flexure. Among the many complaints the most prominent and constant is pelvic pain.

As regards the diagnosis of these cases, the author does not enter into the vexed question of the pathology but calls them chronic circumuterine inflammations, the root of the affection consisting of a diffuse or circumscribed effusion of inflammatory products into the various structures surrounding the uterus.

In not a few of these cases the ordinary methods of treatment, hot water and local applications are powerless to effect improvement. The author's attention was called to the value of the bichloride, by marked improvement following its administration in an aggravated case of this character, where the attending surgeon thought he detected evidence of syphilis. The evidence for its existence was very doubtful. It was therefore tried in over thirty cases of circumuterine inflammation of this character, the details of several of which are given in full. Most of them improve faster than similar cases treated under the old method. In those cases of pain in the pelvis where the cause was doubtful, the obscurity was to a certain extent cleared up by the use of this drug, as it usually failed to relieve it, unless dependent upon inflammatory exudation.

The following mixture was usually given:

Bichloride of mercury	1 grain.
Tincture of gentian	1 ounce.
Water to three ounces.	

Dose, a teaspoonful in water, three times a day after meals.

The following are the conclusions:

(1) The use of the bichloride of mercury internally forms a valuable aid to the local treatment of circumuterine inflammations.

(2) In the doses necessary for its resolvent effect, the drug may be given for several weeks without any untoward constitutional manifestations.

(3) In some cases where the inflammatory products are deeply situated within the pelvis, the internal use of the drug seems to be more efficacious than the most approved local treatment.

(4) A short course of the drug often serves as an

[1] New York Medical Journal, January 28, 1888.

important means for the differential diagnosis of the various obscure conditions which give rise to pelvic pain.

ELECTROLYSIS AND RAPID DILATATION IN THE TREATMENT OF STERILITY AND DYSMENORRHŒA.

Try [2] claims for electricity a superiority over other methods of treating contractions of the cervical canal, which have as their prominent symptoms, sterility and dysmenorrhœa, on the following grounds: First. Its simplicity. No anæsthetics and no assistants are necessary. The treatment can be carried out at the physician's office. Second. Its safety. The electrode is made to travel the cervical canal slowly; it is arrested at the contracted portion until electrolytic action permits it to pass without the use of force. Third. The result is better. The immediate effect is favorable because the galvanic current is in itself a valuable therapeutic agent, and often suffices to cure attendant morbid states of the uterus. The ultimate result has been better in a few cases in which other methods had been previously tried. Time, however, is needed to establish this point.

The method of application is as follows: — With the patient in either the dorsal or semi-prone position, the cervix is *steadied* with a tenaculum. The direction of the cervical canal is explored with the sound. The positive electrode, consisting of a flat sponge about the size of the palm, is placed either over the fundus uteri, or over the lumbar region. The negative electrode is an insulated copper wire, with olive shaped tips of different sizes. One of these somewhat larger than the lumen of the strictured passage is passed gently into the canal, until it meets with the constriction when it is held in contact with it a few minutes until absorption removes the obstruction, and the electrode passes without forcible pressure. It is so carried slowly along the canal, and through the internal os. At the next treatment a larger olive is passed. The sittings should last from eight to fifteen or twenty minutes, and be repeated every five or seven days.

TREATMENT OF UTERINE FIBROIDS BY ELECTROLYSIS.

Dr. J. Knowsley Thornton, [3] in a letter to the *British Medical Journal*, formulates his views on this subject. In substance they are as follows: He says the discussion is premature because fibro-myomata are uncertain in their habits of growth, and retrogression, the most surprising changes taking place in the course of a few months if left to themselves; still more commonly if the patients are carefully handled as to diet, alcohol, rest at the periods, and special medicines. He thinks that nothing which has yet been published by Apostoli or his followers is inconsistent with such natural changes, aided by the effect on the nervous system of confident hope of cure. An interval of health for at least twelve months after treatment is necessary to prove a cure. He says we do not yet appreciate the dangers of the method and urges the profession to wait patiently for definite results. [As Dr. Thornton prefaces these criticisms by saying that he has never tried the method, and being a surgeon (!) does not intend to, as he thinks it may more properly be left to the obstetric physician, their value is distinctly impaired.— Rep.]

[2] American Journal of Obstetrics.
[3] British Med. Journal, March 24, 1888.

TREATMENT OF PROLAPSE OF THE UTERUS BY GYMNASTICS OF THE PELVIC MUSCLES.

Prof. F. von Preusschen [4] describes a case in which he accomplished the cure of a severe case of procidentia solely by means of the method proposed by Brandt, of Stockholm, in 1868. This method consists in the following manipulations: First, the patient is placed in the lithotomy position; the operator standing on the left side of the patient, presses both hands deeply into the lower part of the abdomen while an assistant with his finger in the vagina holds the uterus in a position of anteversion. The uterus and its apendages are seized as well as possible by the operator who forcibly pushes the organ towards the umbilicus. It is then allowed to slowly fall back. The finger of the assistant follows these movements, and by pressure on the cervix prevents the uterus from becoming retroverted. This manipulation is repeated three times in each sitting. Second, with the patient in the same position the knees and ankles are brought close together, and the patient is directed to resist an attempt to separate them. When they are separated, the reverse is done: namely, the patient tries to keep them apart, while the operator presses them together. This exercises the adductors. Third, a series of tapping movements is carried out on the lumbar and sacral regions.

The patient whose history is given had suffered from procidentia for thirty-one years. The only relief had been from the use of pessaries with external attachment. From the first day of treatment the uterus remained in the pelvis, and at the time of the report of the case there had been no prolapse for three months and a half.

The author is of the opinion that the second procedure, the exercise of the adductors is the most important factor in the treatment, though Brandt attaches but secondary importance to that and to the third. Preusschen considers the raising of the uterus of value in correcting the retroversion, and in separating adhesions between uterus and bladder, but not in strengthening the pelvic muscles. The forced movements of the thighs however, cause the whole muscular floor of the pelvis, especially the levator ani, to contract. This contraction can be made more pronounced by telling the patient at the same time to raise the buttocks from the table. In this way the lax muscles regain their tone, they restore the proper support to the cervix, and narrow the opening for the vagina in the pelvic floor.

TREATMENT OF INOPERABLE CANCER OF THE UTERUS.

J. Schramm [5] declares himself dissatisfied with any of the usual methods. These are: (1) Curetting the diseased portions, and the application of the cautery. (2) The dry method of Sänger, curetting followed by the use of iodoform gauze. (3) Alcohol treatment with or without bromine. (4) Painting the ulcerated surface with strong carbolic acid. (5) Washing out with condurango, or use of condurango salve.

Schramm recommends the injection of antiseptic fluids into the diseased tissues. He uses the following formula:

℞	Hydrarg. Bichloridi Corros.	0.25
	Natrii. Chlorati	2.50
	Aquæ	50.00

About two grammes of this is injected into the can-

[4] Centralblatt für Gyn., No. 13, 1888.
[5] Cent. für Gyn. No. 13, 1888.

cerous mass two or three times a week. The results are a clearing of the ulcerated surface, cessation of the foul discharge, and a marked retardation of the process. The general health improves, and hæmorrhages are less frequent.

CHRONIC PYELITIS.

Dr. N. Bozeman[6] describes a most interesting case of chronic pyelitis treated in an entirely novel manner. The patient, thirty-four years old, had for three years been suffering with a constantly increasing pain in the right lumbar region. This pain was variable in character, and aggravated by exercise. It was sometimes acute and sometimes dull. For two and a half years there had been blood present in the urine in varying amounts. Her general health was much depreciated, and she had lost flesh and strength. Within a few months she had had a severe illness confining her to bed for six weeks, during which she suffered from partial suppression of urine, severe paroxysms of pain, nausea, vomiting and high fever, and had found two calculi in the urine. Examination of the urine showed an acid reaction, albumen, and a sediment of blood and pus. The uterus was large, retroverted, and slightly prolapsed.

Two attempts to catheterize the ureter through the urethra failed. An opening was therefore made into the bladder, under ether, an inch and a quarter below the cervix uteri, and three-quarters of an inch to the right of the median line, sufficiently large to admit the index finger. The edges were stitched with a continuous catgut suture. A No. 8 French, olive-tipped catheter was then passed into the ureter, and entered the pelvis of the kidney without meeting any obstruction. Injections of warm water were then made, a drachm at a time being forced in, and then allowed to escape. The next day a drainage instrument devised by Dr. Bozeman, was introduced into the vagina to conduct the urine away as it came from the fistula, thus preventing its running over the mucous membrane and external genitals. This instrument is essentially a hollow, hard-rubber drain, which is shaped to fit the vagina and is connected by a soft rubber tube, with a bag or urinal attached to the thigh, near the knee. Its upper surface is grooved and perforated with a number of small openings into the hollow interior, one or more of which come in apposition with the fistula. The vaginal mucous membrane clings so closely to it, that the urine finds no other channel of escape. With this instrument all the urine was collected when the patient was sitting or standing; a little was lost when she was lying down, but not enough to cause discomfort. It also acted as a pessary to raise and antevert the uterus.

Ten days after the formation of the fistula, systematic treatment of the pyelitis was begun. Every day a flexible olive-tipped catheter was passed into the ureter, and the pelvis of the kidney was irrigated with a warm solution of bichloride of mercury, 1 to 20,000. The patient's sensations were the guide to the quantity, a dull and characteristic pain being felt when the pelvis was distended. At first the capacity of the pelvis was twenty-one drachms, but was at last reduced to five drachms, which Dr. Bozeman believes to be about normal.

Under this treatment, the pus and blood diminished and at the end of three weeks the urine was clear, and deposited no sediment. At the end of six weeks urine collected from each kidney separately, showed that the pelvis of the diseased kidney had returned to its normal condition, and treatment was discontinued. She returned in five months for the closure of the fistula, having been entirely free from pain, gained twenty-five pounds, and become strong and well. The operation was performed, and perfect union resulted. Believing that the backward displacement of the uterus might possibly have caused some obstruction to the ureter, the use of the drainage instrument was continued as an uterine support.

The author then analyzes this case, and one previously treated by the same method, as regards etiology, symptoms, course and termination, differential diagnosis and treatment in an exhaustive manner, for the details of which the reader is referred to the original article.

The following are the most important results which follow the employment of this new method of treatment:

(1) An artificial fistula furnishes an opportunity for the observation and clinical study of disease of the bladder, ureters, pelvis and kidneys, afforded by no other means. This is particularly true of catheterization of the ureters.

(2) The opportunities for treatment, especially for irrigation of the pelvis, are much greater by this method than by any other.

(3) This method of treatment of diseases of the pelvis of the kidney is much less dangerous than the grave operations of nephrotomy and nephrectomy.

(4) Intra-vaginal drainage prevents the evil consequences of incontinence of urine, and perfects the method by removing the chief objection to its employment.

A NEW METHOD OF RADICAL CURE OF RETROFLEXION.

Dr. Schücking[7] recommends for the radical treatment of non-adherent retroflexed uteri, the fixation of the anterior wall to the deepest part of the vesico-uterine peritoneal fold, in other words, the keeping the organ permanently anteflexed. This is accomplished by dilating the uterus, passing a long, curved needle, fixed to a handle, through the anterior wall near the fundus, and bringing it out through the anterior cul-de-sac, which has been pushed up as far as possible on the body of the uterus. The two ends of the suture are then tied, and the vagina packed. The histories of two cases are given. In one the suture was removed on the sixth day, the tampon omitted on the ninth, and on the fourteenth the uterus was back in its old position. The second case, in which the ligature was left in fourteen days, resulted favorably, four months later the uterus was strongly anteflexed.

USE OF THE VAGINAL TAMPON.

Dr. Emmet[8] in discussing the subject, first refers to his views on pelvic inflammations, and says that while his advocacy of the use of hot water vaginal injections was a great advance in the treatment of these troubles, yet it is not infrequently the case that no permanent benefit follows the prolonged use of this agent. This led him to study the pelvic circulation in disease, and to arrive at the conclusion that the important pathological change in cases of prolapse was traction on the

[6] Am. Jour. of Med. Sciences, March and April, 1888.

[7] Cent. für Gyn. No. 12, 1888.

[8] N. Y. Med. Journal, February 18, 1888.

pelvic bloodvessels resulting in a varicose condition of the veins due to a loss of elasticity in the tissues surrounding them. The same condition would result from local peritonitis with adhesions.

Hot-water injections have their greatest effect in the acute stage of pelvic inflammation but when these tissue changes, and the varicose condition of the bloodvessels have occurred, they may accomplish little more than exercise a soothing effect. In these cases the use of the vaginal tampon, compressing the dilated veins, and lifting the uterus to its natural position in the pelvis, will often be followed by good results. Dr. Emmet then gives the history of an interesting illustrative case, and describes in detail his method of applying the tampon.

Clinical Memorandum.

TWO CASES OF CEREBRO-SPINAL MENINGITIS.

BY GEORGE G. SEARS, M.D.

The following two cases are of interest not only as occurring in one family at a time when cerebro-spinal meningitis occurred only in rare sporadic cases, but also because they present a number of the rarer symptoms.

On September 17, 1887, Charles W., a well-built little fellow of two years, who had always been previously healthy, was taken with headache, occasional vomiting, and sore throat. The pharynx was found to be considerably reddened, but otherwise physical examination was negative. There was constipation.

On the 20th there was considerable stiffness of the neck, and efforts to move the head caused pain. Both feet and ankles were somewhat tender and were much swollen, the swelling extending half-way to the knee and pitting on pressure. The pulse was small and rather weak. During the night he had two slight convulsions.

22d. The patient was drowsy and weaker, but otherwise his condition remained about the same. During the night he had a severe general convulsion, in which he died. The febrile movement was slight. A specimen of urine could not be obtained.

Obviously, without the evidence furnished by an autopsy, the diagnosis must be considered very doubtful, yet the record corresponds fairly well with a number of anomalous cases which are frequently reported as occurring during the prevalence of an epidemic, and offers many points of comparison with the early history of the second case, where the diagnosis seemed clear to others who saw the case with me, as well as to myself.

On the 19th, two days after Charlie was attacked, his sister Mary, eight years of age, who had been well up to this time, became slightly feverish and complained of sore throat. The pharynx was somewhat congested, but beyond that physical examination revealed nothing abnormal. The tongue was slightly coated; the pulse was full and strong.

On the 20th she began to complain a little of headache and had diarrhœa. The abdomen was distended and tympanitic, but nowhere tender.

23d. The headache has become much more severe during the past three days. It was noticed, yesterday, that the feet were somewhat swollen and œdematous, and to-day the swelling has increased. Both ankles are very red and tender, the slightest touch causing her to shriek with pain. The wrists and elbows are also painful and tender, but there is very little alteration in their appearance. She complains now for the first time of a "stiff neck," and pressure over the cervical vertebræ is extremely painful. Instead of tossing restlessly about the bed, she now lies very quiet, occasionally moaning, with the head thrown back and held rigidly.

26th. The patient has scarcely slept at all during the past three nights, owing to intense headache, in spite of bromide of potash and morphia. She lies quietly on her back, with eyes half-closed, occasionally uttering a short, sharp cry, or screaming "Papa" or "Mamma," but she replies intelligently to questions, giving her answers in quick, explosive monosyllables. There is no photophobia, the pupils are equal and react well to light. Constipation has now become the rule, and from this time on an evacuation could be obtained only with the use of cathartics. For the past day or two the amount of urine has been diminishing, and during the last twenty-four hours but five or six ounces have been passed, which was high-colored, smoky, and loaded with albumen. The skin is dry.

30th. Under the use of acetate of potash and seidlitz powders, the urine has risen to the normal amount. She complains less of headache, and the swelling of the feet has diminished and the redness of the ankles has disappeared.

During the following two weeks there was a gradual change for the worse. An erythematous eruption appeared for a day or two upon the face and chest. There was more complaint of stiffness of the neck and tenderness over the cervical spines, and the skin over the limbs became markedly hyperæsthetic. She lost greatly in weight and was more drowsy, but still answered questions with intelligence. There was slight delirium at night. The pupils were equal, but dilated, and she became somewhat deaf.

On October 21st, the temperature, which had been normal or subnormal for the four previous days, though without any amelioration of the symptoms, rose to 103.5°, and the patient became much more stupid. The right pupil is now considerably larger than the left. On the following day, the thirty-seventh day of the disease, she had a left-sided convulsion, after which she became comatose, and died a few hours later. The temperature, with the exception of the few days before death noted in the history, and the three days following the onset of the severe symptoms, when the thermometer registered 103.6°, 105°, and 104°, respectively, the morning temperature being given in each instance as the higher, rose but once to 103°. The rest of the time it varied between 100° and 102.5°, only occasionally reaching the latter point. The curve was erratic, and the morning temperatures were quite frequently the higher. The pulse-rate varied considerably from day to day without apparent cause. The greatest variation noticed on two consecutive days was from 82 to 116. No autopsy could be obtained.

The treatment consisted in local applications of ice, bromide and iodide of potash, and occasional doses of morphia. Salicylate of soda and oil of gaultheria were tried for the relief of the joint symptoms, but without apparent results.

The diarrhœa, the distended abdomen, and the general indefiniteness of the symptoms, taken in connection with the season of the year, suggested typhoid fever for a day or two, but the later progress of the disease soon settled the question. As between tubercular meningitis and cerebro-spinal fever, I based my diagnosis on a good family history, the marked stiffness of the neck and retraction of the head, the hyperæsthetic condition of the skin, the cutaneous eruption, the arthritic symptoms, and the absence on repeated examination of any evidence of tubercular deposits elsewhere.

A point of special interest was the occurrence of pharyngitis, which, with pneumonia, seems to be closely related to cerebro-spinal meningitis. In the epidemics in this country from 1811 to 1815, pharyngeal inflammations were unusually frequent, and during the epidemic in New York City in 1872, Lewis Smith says that, in his opinion, an unusually large number of cases of pharyngitis occurred. Any figures which I am able to present are too small to be of much statistical interest, but it is, at least, a striking coincidence, if accidental, that of thirty-two cases which I was called upon to treat as district physician between the 15th and 20th of September, the two cases reported above not being included, there were three cases of pneumonia and nine of inflammation of the pharynx, as against nine cases of the latter affection occurring during the rest of the month, these eighteen cases being 11.6 % of all cases treated. During the eleven months from June, 1887, to May, 1888, in which I was connected with the district, the nearest percentages to this in an average monthly clinic of over 160 new cases were furnished by the following: October with 9%, November with 8.4%, and December with 9.6% ; but as scarlatina became epidemic in the middle of October, and continued till the middle of December, many of these cases probably owed their origin to scarlatinal infection. As compared with the Septembers of the preceding four years, the difference is quite striking, the highest percentage being 3.7 in 1883.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

T. F. SHERMAN, M.D., SECRETARY.

REGULAR meeting, Monday, May 7th, at the Medical Library, 19 Boylston Place, DR. F. H. DAVENPORT in the chair.

DR. F. W. JOHNSON read a paper on

A FEW CASES OF ABDOMINAL SECTION.[1]

DR. B. F. DAVENPORT read a paper on

THE DETECTION OF MORPHINE IN THE URINE AS A MEANS OF DIAGNOSIS.[2]

DR. J. B. AYER said that he was much interested in the paper, and that in many cases the detection of morphine in the urine would prove of much value in the diagnosis of the disease.

CREOLINE.

DR. E. O. OTIS said: Mr. Chairman: I want to call the attention of the Society to two preparations which I have been using of late in the surgeon's room at the Boston Dispensary with much satisfaction. The first is creoline, whose chemical composition, I believe, has not been determined, but it comes from the aromatic class of hydro-carbons. It is not poisonous, and combines the favorable workings of iodoform with those of corrosive sublimate. Esmarch[3] found that its anti-parasitic quality was greater than that of carbolic acid, but its disinfecting quality less. Kortüm[4] has used it with advantage in surgical cases, and also in puerperal fever. He says it cleans up wounds, diminishes suppuration, and induces a speedy cure. Neudörfer, of Vienna, uses creoline only as an antiseptic, and has found one-half to two per cent. solution efficient, using two per cent. solution for instruments and preparing the skin at the seat of operation. He says it relieves pain, checks hæmorrhage, and limits suppuration. He prepares a fresh solution each day by adding two drops of creoline to six ounces of water.

He uses it undiluted for erysipelas. It has also been used in a one-half per cent. solution to wash out the bladder, and besides being a deodorizer and hæmostatic, is said to improve the condition of the mucous membrane. I should think it might be of service as an injection for gonorrhœa, although I have never tried it. I have found it very serviceable for all the cases in which one uses an antiseptic, and especially for poultices, so that I have almost entirely discarded the ordinary flaxseed poultice. I wring out a wad of absorbent cotton in a solution of it, applying it to the suppurating wound, cover it with dry cotton, and apply a bandage. I give the patient a small bottle of the creoline, tell him to add two drops to a cup of warm water, and with this solution make a poultice in the way I have described. Pure, it is a black-looking fluid of much consistence, and with water makes a milky solution with a tarry odor. I use two solutions, one-half and two per cent. The price is about the same as that of carbolic acid.

The second preparation is

PHOTOXYLINE,

called to my attention by Dr. Louis, who assists me at the Dispensary. I use it as Von Wahl directed[5] a five per cent. solution in equal parts of ether and alcohol. It looks like collodion, but its advantages over it are said to be (*a*) its persistent, firm adhesiveness ; (*b*) its absolute impervious ness ; (*c*) its uniform compression of tissues. I use it in many minor operations and injuries. It is said to be especially suitable for plastic operations upon the face and in the neighborhood of the male genitals. Over wounds closed with sutures a thin layer of absorbent cotton saturated with it is placed, and serves as an antiseptic protective. In children, where the soaking of the dressing is not to be avoided, it is of service. It is also recommended for the sutured wounds of laparotomies.

[1] Publication deferred.
[2] See page 124 of the Journal.

— The newspapers are reprinting one of the best of the late Mr. Travers's bon-mots, which was inspired by the sight of the Siamese twins. After carefully examining the mysterious ligature that had bound them together from birth, he looked blankly at them and said, "B-b-br-brothers, I presume."

[3] Centralblatt für Bactèriologie und Parasitenkunde. 1887, 10.
[4] Berlin. Klin. Wochenschrift, 1887, No. 46.
[5] St. Petersburgh Med. Wochenschrift, 1887, No. 20.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.[1]

F. B. HARRINGTON, M.D., SECRETARY.

DR. PHILIP COOMBS KNAPP read a paper on

NERVOUS AFFECTIONS FOLLOWING INJURY; "CONCUSSION OF SPINE." "RAILWAY SPINE." "RAILWAY BRAIN."[2]

DR. J. J. PUTNAM said: I have listened, as I am sure we all have, with the very greatest interest to Dr. Knapp's thoughtful and thorough paper, and the very few words I have to say will be mainly in confirmation of what he has already told us. In the first place I would like to say one word in regard to his reference to me in connection with the subject of hemianæsthesia which was spoken of as indicating hysteria. I certainly did not intend to make the cases out as cases of typical hysteria, in the sense in which he uses that term. I would retract that statement if I made it. The hysterical state is the expression I would use and one could hardly avoid using that term, for very lack of a better.

It certainly seems to me unfortunate that most of these cases are of that class where the medical man is under a good deal of social or moral pressure to consider other things besides his medical duty, and must almost of necessity do so.

I think the railroad surgeon, and even the railroad physician is not in a position to judge fairly about these cases, unless he follows them a very long time. They may recover so as to walk about and even to work, and yet they may be wholly unable to bear any considerable strain. Thus, to speak of but one case, I have in mind a patient who was injured during the war by a spent ball which struck him in the back. He also is in a condition in which it is difficult to diagnosticate any local lesion, but he has been good for nothing ever since the event.

In regard to the hemianæsthesia, it seems to me an important matter because it enables us at least often to satisfy the jury, or, at least, to satisfy ourselves, that simulation is not present; and the immediate question arises, may not a person who is not injured simulate hemianæsthesia; and the value of the sign turns upon the answer to that question. I don't think they all appreciate loss of sensation. I have seen several cases, and one in particular, where this condition was present without having been recognized by the patient at all. In one such case a burning match could be brought suddenly against the skin without his expressing pain, and yet he was walking about and doing business. It would not be easy to simulate the typical form of hemianæsthesia, I think, because that would mean too great knowledge on the part of the patient. This is especially true of the retraction of the field of vision, as tested at the blackboard on different occasions, with the patient's eye at different distances from the board. It would take an accomplished simulator to meet this test with success. I must, however, admit that I have once been deceived, and that the examination should be made with great care, and if necessary should be repeated. With regard to the line of anæsthesia on the skin, I think under most circumstances it is so accurately marked that simulation is almost out of the question; of course, not absolutely. Moreover, it seems to me that these cases do not furnish a large number of simulators. I have seen one or two men who were evidently simulating, and these were the only ones, with one exception, that I have had much reason to suspect, even afterwards.

DR. J. COLLINS WARREN. I think it is interesting to one who sees many of these cases to study the nature of the affection. The question is generally raised in court what would you call hysteria. Is it simply a functional disturbance of the nervous system, or not? Hysteria implies an impairment of the will-power rather than functional disturbance of the nerves. Such functional impairment of the nerves as accompanies this class of cases is more appropriately named nervous prostration, or neurasthenia.

The word shock has been used largely by Page ("hysteria from nervous shock"). The question arises as to what he means exactly by nervous shock. The term shock is so varied in its application in the English language; it means fright, and it means that subtle condition which accompanies injuries or severe surgical operations; it means a moral injury, so to speak, a shock to our ideas of morality. It means a great variety of things; therefore, when the term shock is used, it is a little difficult always to tell what idea the writer means to convey.

A very excellent monograph has been written by Grœningen, a Prussian military surgeon, on shock. He shows how diverse are the views of surgeons on this condition that we see after severe injuries. He thinks there is no organic change in the individual affected. He undertakes to explain it, in this way: There are four degrees of irritation which we may conceive as being produced in a sensitive nerve. First, the form which produces no appreciable change. Second, there is a severer form which produces impairment of function, like impairment of the vision or impairment of taste, impairment of hearing, etc. Frequently tasting of different strong substances, of course, will confuse and impair the sense of taste. Then comes the third degree of irritation, which will produce not only impairment of function but produce the sensation of pain; and finally, there is a fourth and one which covers all the other degrees, a severer form, which will destroy all function. It is this latter form which he conceives applied to the general nervous system which produces the grave phenomena which we recognize as the symptoms of shock. He considers shock as fatigue or exhaustion of the cord and the medulla — not so much the brain as the nervous centres in the medulla — which preside over the various functions of the body, and for the time being impair their action to such a degree that the condition is regarded as one analogous to death; in fact, shock has been described as "a momentary pause in the action of death."

Now, it has been said that we may get milder forms of irritation, and as a result of these milder forms of irritation we may have milder forms of exhaustion. So we may have an acute condition which may terminate fatally, or one from which the patient may recover, or we may have a chronic condition following, which may last for a considerable length of time, and be followed by the general symptoms which we recognize as those of neurasthenia, with perhaps local paralysis besides. Cases of railway shock may no doubt be genuine, still they are often so masked by the surroundings that it is difficult for us to draw conclusions

[1] Concluded from page 108.
[2] Reserved for publication.

from them. I do not mean to imply that such patients are malingerers, or that they are simply hysterical, but the surrounding mental and social disturbances are such as to mask the conditions greatly. I think we can study with much advantage cases which have nothing to do with litigation whatever. I have seen one or two such cases which seem to carry out the idea that there are examples of chronic exhaustion, due, perhaps, to slight injury at the time in a neurotic subject, and which are followed by some form of paralysis. And I think it highly probable that such a case as Dr. Putnam referred to would belong to that class — a slight injury, with a good deal of mental disturbance at the time, with a long continued functional process afterward, paralysis, loss of sexual power, etc.

I call to mind a case of a young lady who fell and hurt her knee. Partial weakening of the muscles of the injured extremity obliged her to use a crutch. The paresis lasted for many months, but was entirely cured by rest, with the usual treatment which accompanies the rest cure. The rest had relieved the exhaustion which had existed in the nervous centre, and the motions of the legs have been perfect ever since. It seems to me that we are not to apply the diagnosis of hysteria to these cases in a loose way, such as reading Dr. Page's book would incline us to do.

DR. E. H. BRADFORD: In view of the importance of this matter, and the difficulty of getting at the facts, I would like to make a motion that a committee of four and the secretary be appointed by this Society to make an investigation in the course of the coming year in regard to the late Bussey bridge disaster. The conditions for such an investigation are peculiarly favorable: We have an accident occurring very near Boston; the victims have been observed carefully by a number of very skilful physicians; we have a number of experts who have carefully examined the cases, and we have a railroad corporation which is particularly fair. In the course of the next year nearly all of these cases will have been settled, and I am quite sure, from what I have heard, that the railroad will give any assistance they can. We shall then learn what has been the result after litigation, how many have recovered and how many have not recovered. I think it will be of substantial value. [The motion was carried.]

DR. MORTON PRINCE: It has seemed to me that under this term, spinal concussion, there have always been included a very large number of different affections, and in particular among them have been included cases which are really cases of gross lesions of the cord. And the worst of it is that it was upon these last that the original doctrine of spinal concussion was founded, in consequence of which a taint has been given to the whole subject. These cases have been and are constantly overlooked because a thorough neurological investigation is not made. But aside from these cases of gross lesions I think that all cases of spinal concussion may be classed under at least four different heads.

First, we have cases which I think can be called traumatic hysteria, including under this term most cases of functional paralysis. I don't know that we can draw any sharp line of distinction defining the purely hysterical cases, and I prefer, for the sake of simplicity, to class them together. It does not seem to me, in the present state of our knowledge, that we can rigidly apply the name hysteria to anything more than a class of functional diseases. If we limit the term to the "grande hysterie" of Charcot, I don't know what we are to do with the large classes of paralyses which constantly occur, and in which we have no reason to suspect any organic lesion. These cases frequently occur, and, I think, comprise a certain portion of the cases of so-called spinal concussion. I have seen many of them, and have here the history of one which is striking in many points. It is the case of a soldier who was struck in the left side in 1862 by a piece of shell, or some other large missile. Being protected by his blanket, which was wound up and slung around him, the blow left no traces. He was taken to the hospital. The left side was paralyzed immediately after the accident, and has remained so ever since. On physical examination, made last May, I found: Paresis of left arm and leg; no atrophy or rigidity of muscles; nearly complete anæsthesia and analgesia of the leg as high as the middle of the thigh, and of the left arm as high as the middle of the upper arm; no sign of any injury to the side where he was struck; left knee-jerk more pronounced than the right; right feeble. This seems to me a case of purely functional disease: and in the light of our present knowledge best classed as hysteria. A similar, though a much simpler case, I saw the other day. It was that of a man who had fallen from a table or something of that sort and struck on his back against a brick. At the time I saw him, a month later, there was partial paralysis of the right arm, and he complained of pain between the shoulder-blades where he was struck, and round about the shoulders. I put a blister over the fourth dorsal vertebra, and he returned in high spirits, feeling perfectly well, and was able to go to work. This seems to me to be an example of a certain number of cases.

It seems to me that rather too much stress has been laid upon the fact as to whether the patient gets well or not after litigation to determine whether it is functional or not. I don't know why hysterical diseases after trauma should not exist as long as those occurring under other conditions. The first case has already lasted twenty-five years, and I have seen several such cases of greater or less severity.

And in this connection I may say that I am inclined to agree with Dr. Knapp in regarding a considerable proportion of the non-railway cases as incurable, or at least presenting an unfavorable prognosis. It is not very uncommon to meet such cases lasting for very long periods. I say non-railway cases, because in the cases following railway accidents there is an element of mental shock that does not enter at all, or only to a slight extent in the other cases. Hence it is that in "railway spine" or "brain" we have a mental factor playing such an important part. Conclusions drawn from the one class cannot incautiously be applied to the other. But because paralysis and other symptoms following concussion do not get well, it does not seem to me that we are justified in assuming an organic gross lesion, such as capillary hæmorrhages. They may still be functional, using that term as ordinarily applied to other affections. How many of the incurable cases are due to comparatively gross lesions can be settled only by future research. Further, it is possible that, as in other prolonged functional diseases, secondary changes may occur rendering recovery difficult.

Another large class should be regarded as traumatic neurasthenia. Many of them present symptoms simi-

lar to those we see every day in patients suffering from the wear and tear of life. I have, to-day, under my care a case of neurasthenia which, if there had been a traumatic history, would be typical of one of these cases of spinal concussion. If left to herself I think she would not get well for a long time, perhaps some years. In that case one might as fairly argue that there was organic disease at the bottom of it, as to claim it for traumatic neurasthenia. Under this class (of traumatic neurasthenia) I think the largest proportion of cases of spinal concussion may be placed.

A third group of cases may be classed as paralysis from idea. I may cite, as enabling us partially to understand this group, the case of a boy who ran across a railroad track with some other boys. He tripped and fell in front of an engine moving towards him. He tried to get up, but found it absolutely impossible to do so. His companions called to him to jump and run, but he could not do it, and told them to go on and leave him to his fate. Just before the engine reached him it was fortunately switched off, and at once he got up and ran away. There was complete paralysis from idea, though, I must admit, it may be fairly questioned whether it is not better explained by a reflex paralysis originating in the emotion of fear. Some of the so-called hysterical knees are better explained as paralyses from idea, as well as many common forms of local paralyses following local injuries.

In this connection I may parenthetically remark that drowning from so-called cramp may be better explained as due to a sudden paralysis of this nature.

But eliminating these three groups, does there still remain a fourth group of cases in which the symptoms can only be explained by a molecular derangement brought about by the physical concussion. While I do not think we can deny the existence of such cases, they must be few and far between. We may even give the Scotch verdict of "not proven." I have here a patient whom I desire to show to-night, who seems to me to have originally answered the requirements of the molecular theory as well as most of the recorded cases. This young man, while swinging on the parallel bars in a gymnasium, fell to the floor, striking on his neck. His feet at the time were high above his head. He did not lose consciousness; but he states, that, when asked by the instructor shortly after he fell, if he could move his legs, he tried and found he could not move either legs or arms. He had the feeling of "needles and pins" all over him. In the course of a few hours, he regained the use of his legs, but his arms remained paralyzed. The first night it was necessary to catheterize him, and he was constipated for some days. At the end of a few days, when I saw him, there remained only paresis of both arms; legs were normal; sensation unaffected; tenderness over fifth cervical vertebra, and he carried his head forward in a stiff constrained manner. The paresis of the arms persisted for about two and a half months and then disappeared. During this time there was no wasting of the muscles, and the electrical reactions were normal. At first I thought this a case of bona-fide spinal concussion; but I now think I was wrong, and that the lesion was probably a hæmorrhage upon the anterior surface of the cord pressing upon the anterior motor nerve roots before they joined the posterior sensory roots. The first general paralysis was probably due to shock. You see he has now completely recovered, and has perfect use of his arms, though he still carries his head forward from habit.

It seems to me, that in many cases, the psychical element plays a very important part. It seems to me that we must assume that it is the psychical shock, and not the physical shock that does the mischief. Patients have experienced almost every one of the customary symptoms, when they supposed they had been injured, although it was found afterward that no injury at all had occurred to them. Therefore it seems to me that it is the psychical influence that plays the dominant part, and not the physical. I think we must be very cautious how we accept the statements of patients in regard to their previous history, because any one who is at all conversant with the legal investigation of cases knows how almost impossible it is to get a correct history of cases previous to the accident; the patients themselves being unable to give a straight account of their previous condition, and when thoroughly known it is often found that there have been points in the history which were not known before, and which play an important part. This young man to-day is unable to state with anything like accuracy the history of his case, but luckily I have a record which was made at the time. In one of the cases reported by Dr. Knapp, my history, as told to me, differs from his in one respect. My notes show that the paralysis did not come on for two months after the wound, and as we know very little about what took place during those two months, it seems me a doubtful case from which to draw conclusions.

Dr. Knapp: During that time he was sick with peritonitis.

Dr. Prince: He says that he was in the hospital.

Dr. Knapp: No; the medical and surgical history of the rebellion tells that.

Dr. Prince: There still remains the possibility of syphilis.

Dr. Bullard: I will only say a few words. First, in regard to simulation of serious symptoms by patients; it has been my fortune to meet with comparatively few cases where I believe this to have occurred. The more I have seen of the class of cases under discussion, the more I am inclined to doubt that much simulation exists. There is no question that there are many patients who complain of symptoms which are entirely subjective; but certainly, in a large proportion of cases, these symptoms occur, and persist in a way altogether inexplicable on the simple ground that they are simulated.

There is another point of great importance in considering cases of this character, and that is the previous history. In persons predisposed to hysteria or of specially excitable nervous temperament, hysteria and other functional nervous disorders are more easily induced than in others of more healthy constitutions. This is a very important point to be considered in any case. An accident which will cause no serious injury to a person of healthy and vigorous health with no abnormal predispositions may produce very serious and lasting effects upon one with a tendency, whether active or latent, to functional nervous disorders (hysteria, neurasthenia, etc.).

It is therefore extremely important that we should ascertain as far as possible the previous history of the patient. This is often very difficult but it should be

sought for thoroughly, not simply on the ground mentioned, but also and even more because many of the symptoms which most frequently occur in these cases are liable to be produced by other causes, as syphilis, alcohol, lead, etc., and may or may not have existed previous to the injury. In all cases these possible causes should be as nearly as possible eliminated.

There is no doubt that under the term "railway spine" there are included a *variety* of pathological conditions. Some are no doubt functional in the sense that if we should examine the nervous system, we should with our present methods of examination, find nothing wrong; others are unquestionably organic.

There seems to me to be no safe course open in the present state of our knowledge on this subject, but that each case should be studied carefully *by itself*, and decided on its own merits.

DR. KNAPP: I would like to make one or two more remarks. I did not mention the statement made by Page that all of these disturbances occur in patients who have a pecuniary interest in the case, and he questions if such cases are ever seen in hospitals or out-patient clinics, when there is no pecuniary interest involved. I think that is characteristic of the statements that Mr. Page makes in his work; and it seemed to me, as I have said, that most of the cases that I have reported had no pecuniary interest whatever, which answers Mr. Page's criticism.

I think Dr. Prince is disposed to be a little too vague in what he calls hysteria. It must mean something or nothing. Hysterical, however, does not mean functional, the less cannot be properly used to mean the greater. If it is to be used as a general term, that is one thing; limiting hysteria to the sense in which I have employed it, I think we see very few cases of traumatic hysteria. Paralysis depending upon idea, is of course hysterical paralysis. As I intended to bring out in my paper, some of the cases that I have seen are neurasthenia, pure and simple.

Many of their symptoms were symptoms of undoubted organic disease; incontinence of urine, nystagmus, exaggeration of reflexes. These symptoms are not those of functional nervous disease. While I believe a part are neurasthenic, and another part functional, I do not wish to say that all cases that are functional are hysterical or neurasthenic. There are a good many functional diseases beside these, and it is a good idea to keep the boundaries as nearly fixed as we can. I think there are a good many cases where we find signs of some organic nervous disease, and the explanation of Westphal seems to me the most plausible for such cases.

Recent Literature.

A Practical Treatise on Diseases of the Skin. By JOHN V. SHOEMAKER, A.M., M.D. New York: D. Appleton & Co. 1888.

"All at once a conviction flashes through us that we have been in the same precise circumstances as at the present instance once or many times before." This quotation from "The Autocrat of the Breakfast Table" indicates with sufficient accuracy the dominant mental sensations derived from reading this treatise upon diseases of the skin by any one who is familiar with Duhring's work upon the same subject. The arrangement of the chapters and their various subdivisons is almost a replica of Duhring. Much of the text also bears a striking resemblance to that of the same author. There is some shifting about of sentences and ideas as well as alteration of individual words, but the framework is the same and to be recognized in spite of the altered verbal drapery with which it is hung. The following parallel columns will serve as *pièces justificatives* of this assertion. That the resemblance is not merely due to identity of subject, may be demonstrated by taking any treatise upon diseases of the skin other than that of Duhring — Hyde's or Robinson's for example — and making a like comparison.

DUHRING. (3d Edition.)	SHOEMAKER.
"Directly the reverse of hyperæmia is the condition termed anæmia in which there is a deficiency in the amount of blood in the cutaneous capillaries. This state may result from an absolute want of blood in the general system, in consequence of hæmorrhage, or it may follow disease, as in chlorosis. It is characterized by loss of the natural color of the skin, succeeded by a blanched whitish or yellowish hue, affecting according to its course and nature, either the whole surface or certain regions, as the extremities. It is also attended by a decrease in the temperature of the surface, and at times by cold sweating." [Page 80.]	"Anæmia of the skin is symptomatic of a deficient amount of blood in the cutaneous capillaries. It may be the result of disease or may be due to excessive loss of blood from the general system by hæmorrhage. It is characterized by unatural pallor which may be succeeded by a yellowish or greenish hue involving all or a great portion of the skin. It is usually attended by a decrease in the surface temperature, and may be accompanied by profuse perspiration." [Page 47.]
"Seborrhœa is a disease of the sebaceous glands, characterized by an excessive and abnormal secretion of sebaceous matter, forming upon the skin an oily coating, crusts, or scales." [Page 115.]	"Seborrhœa is a functional disease of the sebaceous glands, characterized by an excessive and altered condition of the sebaceous secretion, forming an oily coating, crusts or scales upon the skin." [Page 92.]
"Ordinarily they consist of torn points, lines or streaks more or less furrowed with shreds of epidermis variously sized and shaped for the most part irregular, showing reddish moist surfaces, oozing minute quantities of serum and blood which have a tendency to dry into crusts." [Page 62.]	"They vary in size and shape, but generally consist of torn points or linear furrows, from which minute particles of blood or serum are oozing, or which have dried up and formed a crust over the lesions." [Page 40.]
"Epithelioma may be confounded with syphilitic tubercles and ulcerations, accuminated warts, lupus and the rare affection, rhinoscleroma. The papule or ulcer of epithelial cancer especially if about the genitalia, may also resemble the chancre, but attention to the history to the duration of the lesion, and to other points of diagnostic value will aid in arriving at a correct opinion. The evolution of late syphilitic formations is always much more rapid than that of cancerous, only rarely in malignant cases does epithelioma run a rapid course. The characters, moreover, of the ulcerative process due to syphilis is very different from that of epithelial cancer. In tubercular syphilis, two, three or more points of ulceration are apt to exist, in cancer, usually only one. In syphilis the secretion is generally abundant, yellowish and creamy, in cancer it is scanty, streaked with blood, viscid and stringy. The condition of the tissues surrounding the ulcers, is also different. In the infiltrating variety of cancer there is more or less induration, in syphilis there is none, the deposit generally terminating abruptly against the sound skin. In cancer there is apt to be pain of a lancinating character, in syphilis the ulcer is usually without pain." [Page 555.]	"The diagnosis of epithelioma is easy in advanced stages of the disease, but the disease might in the beginning of an attack be confounded with the lesions of syphilis and lupus vulgaris or with ordinary warts, simple condylomata or seborrhœa sicca. The papule or nodule of epithelioma may at first resemble a hard chancre, but the history of the case and the course and duration of the lesion will soon point to the correct diagnosis. The epitheliomatous ulcer might at first sight be confounded with a tertiary syphilitic ulcer, but syphilitic ulcers are usually multiple, while epithelioma is almost invariably single. The secretion in syphilis is fetid, yellow and abundant, while in epithelioma it is usually blood-streaked, viscid and scanty. Epithelioma is usually surrounded by a well-marked zone of infiltration, which is either absent or insignificant in syphilis. Finally, epithelioma is a disease of long duration accompanied by severe lancinating pain while the ulceration of syphilis runs a comparatively swift course and is not attended with any pain." [Page 463.]

This resemblance is diffused throughout the book. In those portions which relate to therapeutics, where

the author exhibits more independence, the defect which is most conspicuous in Duhring's work is apparent also in this; namely, a want of perspective in handling the subject, a discursiveness of recommendation and vagueness of direction which render it difficult for the student always to make up his mind exactly what is the best thing to do. A long list of formulæ ends the book which is not without decided merit, but which to all intents and purposes may be regarded as a later and improved edition of Duhring. G. H. T.

The Throat and its Diseases, including Associated Affections of the Nose and Ear. With one hundred and twenty illustrations in colors and two hundred engravings, designed and executed by the author, LENNOX BROWNE, F.R.C.S.E., Senior Surgeon to the Central London Throat and Ear Hospital, etc. Second edition. Rewritten and enlarged. Philadelphia: Lea Brothers & Co. 1887.

This is a very practical and original work. It is intended especially for general practitioners, and can be cordially recommended to them. To the specialist it will be of interest, as it is a mirror of the author's own practice and ideas concerning a class of diseases which for many years he has had rare clinical opportunities for observing.

As Mr. Browne tells us that his work has no pretensions to be considered exhaustive, we need not find fault with him for the incomplete manner with which he has disposed of some of the important affections of the nose and naso-pharynx. He has evidently written his book *con amore*, and those subjects of special interest to himself are thoroughly treated. The chapters, for instance, on inflammation of the submucous tissue of the larynx — œdema — syphilitic laryngitis, and especially those on tuberculous laryngitis, and lupus of the mouth, pharynx, and larynx, are worthy of all praise.

In Chapter I, in speaking of the action of the crico-thyroid muscle, the author erroneously states that its office is to draw the thyroid cartilage downwards. Its action, however, which is to pull the cricoid upwards, is also given; but then the author adds that, "practically, the point is not one of great importance, since the effect of the muscular movement is, in either case, equally to stretch the vocal cords." It is quite true that the cords would, in either case, be stretched. It seems to us, however, that those who like to know the right from the wrong must consider it important to have a correct idea of how this muscle acts, since perfect vocalization is impossible without tension of the vocal cords, and this tension is controlled by the crico-thyroid muscles and the expiratory blast of air carrying the cricoid cartilage upwards on to the thyroid. The thyroid cartilage, owing to the powerful muscles attached to it, is the fixed point.

In the chapter on "Therapeutics of Throat Diseases," the use of sprays to the larynx and the administration of snuffs in nasal diseases is condemned as being unphysiological, seldom beneficial, and often deleterious. The only conditions in which the author has found powders of benefit are tuberculous thickening and ulceration of the epiglottis, and in malignant diseases. Considerable stress is laid upon the value of "Leiter's Temperature Regulators" in cases of tonsillitis and other acute inflammatory troubles of the fauces and larynx.

The subjects of acute laryngitis, exudative inflammation of the larynx, and diphtheria are ably discussed. Acute laryngitis in children and in adults is considered to be one and the same affection; the features of distinction being due to the age at which the attack occurs, and not to any difference in its morbid anatomy. Mr. Browne insists that the severity of inflammations of the larynx in the young is due to the greater tendency in children to plastic exudation, as a result of simple mucous inflammations. The small size of the larynx in the child may also influence the severity of infantile laryngitis. By exudative laryngitis or croup the author means a pseudo-membranous inflammation of the air-passages of an essentially non-infectious and non-contagious nature, which exhibits local, rather than constitutional symptoms. This disease is considered to be altogether distinct and different from diphtheria.

In the chapter on malignant neoplasms, some points on the lymphatic system in relation to isolation of cancer in the larynx are brought out which are interesting, and which are not generally recognized. It is shown that the lymphatics of the larynx are not isolated, and that it is by no means true that that portion of the larynx which is usually attacked by carcinoma is ill supplied with lymphatics. Two beautiful illustrations from Sappey's "Atlas of the Lymphatic System" are given, as well as full quotations from his writings on this subject. In speaking of abnormal sensations in the pharynx, such as heat, pricking, swelling, weight, some foreign body, or the *globus hystericus*, Mr. Browne expresses the opinion that such feelings are always symptomatic of some objective cause; the principal condition which gives rise to them being a varicose condition of the veins at the base of the tongue. A sensation to taste, and sometimes the actual presence of blood in the mouth on rising from sleep, is believed to be characteristic of varix of the tongue, of the mouth, or of the pharynx. Neuroses of the larynx are disposed of in a very few pages. "Abductor" paralysis receives but brief notice, as Mr. Browne does not consider it a subject of any practical importance. We may here, in passing, call attention to Figures 96 and 97 (Plate x), where the author pictures what he calls paralysis of the left abductor. We see no evidence whatever that the left abductor is alone paralyzed. To us, the appearances in inspiration and in phonation are typical of complete paralysis of the recurrent nerve, and, consequently, of the whole group of muscles attached to the left cord. When a vocal cord is observed to be completely immovable, we have never been able to understand what justifies the assertion that only one particular muscle is paralyzed, and not two or more muscles of the laryngeal group. The *position* which the paralyzed cord assumes is no criterion, since we see it in different positions, according to individual peculiarities, when the recurrent nerve is wholly destroyed. Most of the illustrations in this work are from Mr. Browne's own brush or pencil. They are very numerous, beautifully drawn, and are an important feature of this excellent book, which will meet the needs of the general practitioner, and which no laryngologist ought to be without.

— The last International Medical Congress cost $17 per member, against $10 per member at the London and Copenhagen Congresses.

THE BOSTON

Medical and Surgical Journal.

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SANITATION SOCIOLOGICALLY CONSIDERED.[1]

THE city of Glasgow is fortunate in having as its health officer, a physician of keen perception, and one who is alive to the sanitary welfare, not only of the people of his charge, but of mankind in general.

A recent address by Dr. Russell is especially worthy of the perusal of all sanitarians. In this address, entitled "Some Sociological Aspects of Sanitation," he discusses some of the arguments offered by Herbert Spencer, wherein the latter states the law of "right social relationships, that every man has freedom to do all that he wills, provided that he infringes not the equal freedom of any other man." Dr. Russell does not question this principle, but rather its application to sanitation. "It is only when we follow Mr. Spencer into the details of his method of dealing with public health that we can discover whither he would lead us. He maintains that it is not the duty of the State to protect the health of its subjects, and that sanitary administration by State and municipal authorities is wrong. All taxation for sanitary administration being the abstraction from the citizens of more property than is needful for the sufficient defence of his rights, is to be condemned. . . . It follows that neither the past, present nor proposed methods of securing the health of towns, are equitable." Mr. Spencer goes on to sketch a model method of sanitation of his own proposal. "Respecting sewerage there would be no difficulty. Houses might readily be drained on the same mercantile principle, that they are now supplied with water. It is highly probable that, in the hands of a private company, the resulting manure would not only pay the cost of collection, but would yield a considerable profit. . . . Paving and lighting would properly fall to the management of house-owners. Were there no public provision for such conveniences, house-owners would quickly find it their convenience to furnish them.

"If this is said to be impracticable, Mr. Spencer replies that therein lies the virtue of the scheme; for the impracticability arises from the imperfect morality of mankind, and perseverance in these impracticable methods will elevate the general morality until it becomes practicable. If, out of the intermediate chaos will arise disease, which will involve good and bad, he welcomes disease, especially epidemic disease as one of the saviors of society. Partly by weeding out those of lowest development, and partly by subjecting those who remain to the never-ceasing discipline of experience, nature secures the growth of a race who shall both understand the conditions of existence, and be able to act up to them." And thus we are introduced by Spencer to the doctrines of "natural selection" as applied to sanitary laws. He regards the methods of sanitation now in vogue as calculated to further the "survival of the unfittest."

Dr. Russell in commenting upon these paragraphs from Spencer[2] considers the comparative value of disease as a factor in natural selection in civilized man and in the lower animals. "We must not think of disease," he says, "or rather its causes, merely as producing death, as we are apt to do, when the elevation of the race, by the extinction of the individual fills up our field of vision. Disease is not like the deer-stalker's bullet when his aim has been true, and one falls while all the rest of the herd gallop away unharmed. It resembles the discharge of 'buck-shot' or 'sparrow-hail' which scatters, and for every one killed there are a number maimed. Granting, then, that the most unfit dies, round every *deceased* unfit there are a number of *surviving* more or less unfit, because of the effects of disease. This is the invariable result of the action of disease or disease-producing agencies on life. But in the lower animals the predatory instincts of one order promote the development of another by killing and devouring its weaklings, and within the order itself sexual selection tends to isolate the individual from posterity. In civilized man the weaklings survive, and sexual selection does not effectively prevail. The analogy is perfect between the effects, immediate and remote, of a cartridge fired at a large covey and a volley on the battle-field, and the comparative value of disease as a factor in natural selection in these cases. In the former there are the dead which are bagged by the sportsman, and the wounded who are eaten before nightfall by hawks, weasels, cats, etc.; in the latter there are the dead who are buried, and the wounded who are carried away and survive with various deformities and injuries. If you want full evolutional value out of disease in man, regarded merely as an animal, you must kill or seclude from society; but killing is murder, and sexual selection can only be promoted by the diffusion of knowledge and the elevation of morality to such a sublime pitch that the individual will limit his happiness, subdue his desires, and in short, extinguish himself for the benefit of posterity."

Dr. Russell concludes, that, under existing circum-

[1] "On Some Sociological Aspects of Sanitation," by James B. Russell, B.A., M.D., LL.D., President of the Philosophical Society, of Glasgow. The President's Address, November 2, 1887.

[2] Social Statics. 1868.

stances the most efficacious and direct method of promoting the survival of the fittest in civilized man is to prevent disease of all kinds by the removal of its causes. But different diseases present different sociological aspects, some begin and end in the individual, and do not descend vertically, or spread laterally as morbid entities. Their value in the process of selection is confined to the extinction or the weakening of the staying-power of the individual. Simple inflammations like pleurisy and pneumonia, are examples of this class.

Other diseases, as gout, insanity, etc., descend or tend to descend, vertically. They are distinctly hereditary. Others, again, are remarkable for lateral extension from person to person, from town to town, from country to country. These do not descend vertically, and influence posterity only indirectly in the same ways as the first class. But they stand out as the most potent sociological disease factors in virtue of their power of lateral extension or infectivity.

Dr. Farr says of the diseases of this class: "They distinguish one country from another, one year from another; they have formed epochs in chronology; and, as Niebuhr has shown, have influenced the fate, not only of cities such as Athens and Florence, but of empires; they decimate armies, disable fleets; they take the lives of criminals that justice has not condemned; they redouble the dangers of crowded hospitals; they infest the habitations of the poor, and strike the artisan in his strength down from comfort into helpless poverty; they carry away the infant from its mother's breast, and the old men at the end of life; but their direst eruptions are excessively fatal to men in the prime and vigor of age." This last statement is not exactly in harmony with Spencer's "sweeping away by pestilence tens of thousands of unhealthy livers;" or the "weeding out those of lowest development."

Dr. Russell then proceeds to sketch with a masterly hand the most important communicable diseases, and finally sums up their common characteristics as follows:

(1) *The property of lateral extension.*

(2) *The habit of endemicity,* or of lurking in the intervals between epidemics in places where the conditions are peculiarly favorable to the maintenance of the disease.

(3) *The artificial and therefore remediable nature of the local conditions which foster endemicity.* These conditions are essentially of the nature of uncleanliness.

(4) *Even those communicable diseases, such as small-pox, measles, scarlet-fever and whooping-cough, which can scarcely be said to live upon uncleanliness, but attack man as man, are all aggravated thereby.*

(5) *The soil which sustains the communicable disease in the epidemic condition, and promotes the epidemic expansion is the same which produces general unwholesomeness.* In short, the adoption of radical measures for preventing epidemics covers the whole field of sanitation.

(6) *Whoever persists in a manner of life calculated to produce or promote communicable disease injures himself first, but next, and with certainty, his neighbor.* Carlyle, in quoting Alison's story of the poor Irish widow, answers the question, "Who is my neighbor?" as used in this connection. Her husband died of typhus "in one of the lanes of Edinburgh," and she wandered about the town with her three children, seeking help, and finding none returned to her lane, and died there, and set a-going a local epidemic which ended in the death of "seventeen other persons." "Very curious," says Carlyle. "The forlorn Irish widow applies to her fellow-creatures, as if saying, 'Behold, I am sinking, bare of help; ye must help me! I am your sister, bone of your bone, one God made us; ye must help me.' They answer, 'No, impossible; thou art no sister of ours.' But she proves her sisterhood; her typhus fever *kills* them. They actually were her brothers, though denying it! Had human nature ever to go lower for a proof?"

"It certainly was low enough," says Dr. Russell, "but human nature requires such arguments, and the ultimate cause of the existence of communicability in disease is, I believe, to enforce the golden rule upon us in reference to the physical well-being of mankind. For 'who is my neighbor' in this aspect? Not only is the Irishman in his miserable hut neighbor to Dives in Belgravia, but the Polish Jew in his filthy 'quarter'; not only the unvaccinated children of Leicester, but the unvaccinated French-Canadian; the Mahommedan pilgrim, who drinks at Mecca the waters of the sacred well of Zem-Zem, which the profane chemist tells us is polluted with sewage and a main factor in the dissemination of the cholera which he carries a long stage on its journey to Europe. Indeed, in these days rapid transit has so shrivelled up space, and commerce so intermingles and distributes articles of trade which may carry disease, that it is hard to say who in the wide world may not prove their affinity to me as forcibly as my next-door neighbor.

"The practical question is, 'What am I to do with my dirty neighbor?' and we must bring to the solution of it a little common-sense and ordinary business principles as well as philosophy. The first thing to be done is to make him a voting unit in some convenient area of local government. Impose upon local administrative bodies the duty of providing the physical conditions and appliances of health, such as water-supply, sewerage, drainage, infectious hospitals, disinfecting apparatus, and of carrying out the daily operations, such as scavenging and sanitary supervention, necessary to keep the district clean outside and inside the houses of the inhabitants. To provide against the contingency of my dirty neighbor having a local majority, as well as to maintain a staff of higher capacity to advise in special emergencies and hold local inquiries, let there be at the head of the sanitary administration of the country a local government board, armed with power to enforce the performance of such duties as, being neglected, first injure the locality, but

next involve a risk to the general well-being of the country. The local administrative must, of course, have parallel power of prosecuting and punishing the dirty neighbor for overcrowding and other nuisances which affect the well-being of the neighborhood.

"The solidarity of human interest in the face of communicable disease has in recent times asserted itself far beyond the submerging of the individual. Nations are now learning that organization, to be equal to the task of successfully resisting the inroads of such diseases as cholera, yellow fever, and small-pox, must embrace not only local authorities within nations, but nations themselves. Even the United States, with all its jealousy of central interference with the doings of individual States, learned from the ravages of yellow fever in the Mississippi Valley in 1878 that some general coördination and direction was necessary for the national good, and hence the act establishing a National Board of Health passed by Congress in the following year. In Europe the same powerful agency has brought governments into negotiation. Step by step the final end of the existence of communicable disease is being worked out. Self-interest enlists the most enlightened nations in the promotion of the physical welfare of the poorest and most wretched inhabitants of the remotest corners of the earth."

AN ILLUSTRATION OF MEDICAL BULLETINS.

THE catalogue of ills in the last bulletin of General Sheridan's physicians, as published in Boston daily papers, is a good illustration of the difficulties and annoyances to which the physicians of public men are subjected. The bulletin read as follows, in a paper of wide circulation, which has done much to popularize medical knowledge:

"The immediate cause of death was heart failure. The remote cause was disease of the mitral and aortic valves, the existence of which was known to his physicians, to himself and to his family in November of last year. The complications which have occurred have been nervous exhaustion, pulmonary insarctions, pneumonia, pulmonary fegeria, anasarca and hemorrhages."

The complications varied somewhat in other papers, thus:

"Nervous exhaustion, pulmonary insarctions, pneumonia, pulmonary œgeria, anasaca and hemorrhages."

"Nervous exhaustion, pulmonary insarctions, pneumonia, pulmonary, œgeria, anasaca and hemorrhages."

"Nervous exhaustion, pulmonary anasarctions, pneumonia, pulmonary œgeria, anasarca and hemorrhages."

The physician must be brave even to rashness who confides a delicate diagnosis to the telegraph and the daily press.

ARMY MEDICAL EXAMINATION.

THE JOURNAL publishes to-day a notice of the organization of an Army Medical Board, which will meet in New York City on the 1st of October, for the examination of candidates for the Medical Corps of the Army, a notice for which we doubt not many young medical men look with interest. The army service is in one respect, certainly, an attractive one. It has room for men with special tastes for literary and scientific work, and knows how to utilize such men for their own and the general welfare.

MEDICAL NOTES.

— Another man jumped from the Brooklyn bridge August 3d. His name is Matthew Byrnes, and his age twenty-one. He was picked up by the tug Cheney, which was towing the floating hospital of St. John's Guild down the bay. When off Governor's Island he was transferred to another tug, which carried him to the Hamilton ferry slip. He was subsequently taken to the Long Island College Hospital, where he was examined. His back, the calves of his legs and the back of his arms were marked with black-and-blue ridges. He said he felt no pain internally, but complained bitterly of the cold. Whiskey and hypodermic injections were freely administered to him, and he was enveloped in several blankets. When asked how he felt, he replied, "All right every way, but I'm cold." A few minutes later, after a second hypodermic injection had been administered, he shouted "Stop that; this is the tenth time you have stuck me with that needle." Soon after he fell asleep. He will probably recover, and if so, will be arraigned in the court. He is unmarried.

BOSTON AND NEW ENGLAND.

— Boston papers have recently contained the story of the refusal of the police to permit the use of a police ambulance to transfer a sick man to the hospital. It may be interesting to physicians of the city to know that the use of the police ambulances is restricted to accidents.

— The amount of patent medicines received at General Sheridan's cottage at Nonquitt, from well-meaning admirers, would, it is said, fill a small apothecary shop. The doctors, also, were deluged with advice by mail, about the treatment the patient needed. It came from all over the country, like the patent medicines.

— Judge Aldrich, of the Superior Court, granted an injunction, August 2d, restraining Dr. Frank L. Weir from practising as a physician in Taunton, Mass., or within ten miles of Taunton Green for five years, under an agreement made with the plaintiff in this case in July, 1887. The plaintiff, who went abroad, leaving his patients in the care of the defendant, alleged that in violation of the contract, the defendant had opened an office in Taunton.

— We learn from the daily papers that the thirty-five cases against the Boston & Providence Railroad Company, which arose from the "Bussey Bridge" accident, and were placed in the charge of one Boston lawyer, have been settled without a trial, two of the

cases being referred to arbitrators. In the case of Oscar H. Norman, the arbitrators awarded the plaintiff $18,000. The highest amount received for any one injured in the accident was $25,000, and it is understood that the whole cost to the company was $100,000. The bills of physicians paid by the company are said to have been about $100,000. It is stated that the fees of Mr. Winslow Warren, who acted for the company in settling claims, exceeded $50,000.

NEW YORK.

— An ordinance has been adopted by the Board of Health requiring that at every hospital and dispensary in the city one or more rooms shall be provided for the reception and isolation of persons suffering from contagious disease.

— The attention of the Board having been called to the practice of undertakers carelessly throwing ice which has been used about dead bodies into the streets, where it is apt to be picked up by children and carried to their homes, the Secretary of the Board has been directed to notify all undertakers that the practice must be discontinued.

Miscellany.

A NEW QUARANTINE ACT.

The following is the quarantine act which passed the Senate May 3, 1888, passed the House July 23, 1888, and was approved by the President August 2, 1888. Its provisions go into immediate effect, and the quarantine buildings will be erected as soon as practicable. Steps will be immediately taken to secure sites for the quarantines not now on Government land:

AN ACT TO PERFECT THE QUARANTINE SERVICE OF THE UNITED STATES.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That whenever any person shall trespass upon the grounds belonging to any quarantine reservation, or whenever any person, master, pilot, or owner of a vessel entering any port of the United States, shall so enter in violation of section one of the act entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," approved April twenty-ninth, eighteen hundred and seventy-eight, or in violation of the quarantine regulations framed under said act, such person, trespassing, or such master, pilot, or other person in command of a vessel shall, upon conviction thereof, pay a fine of not more than three hundred dollars, or be sentenced to imprisonment for a period of not more than thirty days, or shall be punished by both fine and imprisonment at the discretion of the court. And it shall be the duty of the United States attorney in the district where the misdemeanor shall have been committed to take immediate cognizance of the offense, upon report made to him by any medical officer of the Marine-Hospital Service, or by any officer of the customs service, or by any State officer acting under authority of section five of said act.

Sec. 2. That as soon after the passage of this act as practicable, the Secretary of the Treasury shall cause to be established, in addition to the quarantine established by the act approved March fifth, eighteen hundred and eighty-eight, quarantine stations, as follows: One at the mouth of the Delaware Bay; one near Cape Charles, at the entrance of the Chesapeake Bay; one on the Georgia coast; one at or near Key West; one in San Diego Harbor; one in San Francisco Harbor; and one at or near Port Townsend, at the entrance to Puget Sound; and the said quarantine stations when so established shall be conducted by the Marine-Hospital Service under regulations framed in accordance with the act of April twenty-ninth, eighteen hundred and seventy-eight.

Sec. 3. That there are appropriated for the purposes of this act the following sums, out of any money in the Treasury not otherwise appropriated, for the construction, equipment, and necessary expenses of maintaining the same for the fiscal year ending June thirtieth, eighteen hundred and eighty-nine.

[Here follow the specific appropriations for 1889, which are substantially as follows:

For the Delaware Breakwater quarantine, $75,000; for the quarantine station near Cape Charles, Virginia, $112,000; for the South Atlantic Station (Sapelo Sound), $38,500; for the quarantine near Key West, $88,000; for the Gulf quarantine (formerly Ship Island), provided for by the act of March fifth, 1888, $15,000; for the quarantine station, San Diego Harbor, California, $55,500; for the quarantine station at San Francisco, California, $103,000; for the quarantine station at Fort Townsend, $55,500.]

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

CIRCULAR No. III.

WASHINGTON, D. C., July, 1888.

The Committee of Arrangements takes pleasure in announcing to the members and invited guests of the special societies taking part in the Congress that the arrangements are sufficiently advanced to assure the success of the First Triennial Session of the Congress of American Physicians and Surgeons, which will be held in the city of Washington during the 18th, 19th, and 20th of September next.

A number of distinguished physicians and surgeons have signified their acceptance of the invitation to attend, among whom may be named Sir Spencer Wells, Sir Andrew Clark, Sir William McCormac, Drs. W. O. Priestley, William Ord, and Grainger Stewart, Mr. Lawson Tait, Mr. Victor Horsley, Mr. Thomas Bryant, Mr. Thomas Annandale, Professors Ferrier, Esmarch, and Gerhardt, Drs. Rafael Lavista, of Mexico, J. L. Reverdin, of Geneva, O. W. Holmes and H. I. Bowditch, of Boston, Joseph Leidy, of Philadelphia, W. Kingston and Eccles, of Canada.

The preliminary programmes of the participating societies have been published. It is hoped the classified and final programmes will be forwarded without further delay. Several are already in possession of the Committee. As soon as all are received, the final programme of the Congress will be printed and distributed.

Places of meeting for the Congress and each of the

societies have been secured, conveniently located, so that members may interchange attendance without annoyance.

The meetings of the Congress will be held during the evenings, beginning at 8 o'clock P. M; on the evenings of the 18th and 19th the meetings will be held in the main hall of the Grand Army Building, 1412 and 1414 Pennsylvania Avenue, and on the last (Thursday evening) in the hall of the National Museum. During this evening the Army Medical Museum and Library Building, alongside of the Museum Building, will be lighted and opened for the inspection of the members and invited guests. The meetings of the societies will be held during the day, according to the programme each may respectively provide. The sessions will be open to the profession.

On Monday evening, September 17th, a dinner will be given by members of the Congress to the guests of the participating societies. Invitations to this dinner will be sent only to the specially invited guests who have indicated their acceptance. The contributing members will receive cards of admission. It will be limited exclusively to members of the Congress and invited guests.

An informal collation will be served at Willard's Hotel on Tuesday evening, after the adjournment of the meeting of the Congress, to the guests and those members who may choose to attend. A similar entertainment will be served in the National Museum Building on Thursday night, after the final adjournment of the Congress.

Guests are requested to notify the Chairman immediately after their arrival in Washington, giving their address, and stating whether they have ladies with them. Special arrangements will be made for the entertainment of the wives and daughters of the guests.

Hotel accommodations are ample, and conveniently located to the places of meeting.

The Secretaries of the special societies are requested to forward to the Chairman the names and addresses of their foreign guests.

Members of the Congress and their guests are expected to register. A parlor in Willard's Hotel will be provided for that purpose, from which the mail of the members and guests will be distributed, and at which the city residence of each member or guest can be ascertained.

All communications should be addressed to the Chairman of the Committee.

SAMUEL C. BUSEY, M.D.,
1545 *I St. N. W., Washington City,*
Chairman Committee of Arrangements.

EXAMINATION FOR THE ARMY MEDICAL CORPS.

An Army Medical Board will be convened in New York City, New York, October 1, 1888, for the examinations of such persons as may be properly invited to present themselves before it as candidates for appointment in the Medical Corps of the Army.

Application for an invitation should be addressed to the Secretary of War, stating date and place of birth; place and State of permanent residence, and accompanied by certificates, based on personal acquaintance, from at least two persons of repute, as to citizenship, character and moral habits; testimonials as to professional standing, from the Professors of the Medical College from which the applicant graduated, are also desirable. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a Regular Medical College, evidence of which, his diploma, must be submitted to the Board.

Further information regarding the examinations and their nature, may be obtained by addressing the Surgeon General, United States Army, Washington, D. C.

Correspondence.

ABSCESS OF THE BRAIN.

VALPARAISO, May 14, 1888.

MR. EDITOR, — In the report of the meeting of the Suffolk District of the Massachusetts Medical Society, held January 11th, the discussion following the reading of Dr. Bullard's paper on "A Case of Cerebral Localization" was interesting; but what most forcibly called my attention was Dr. Bradford's statement that the sense of the meeting seemed, in reference to cerebral surgery, to be one of disparagement.

During my service as house-surgeon in the Boston City Hospital under the late Dr. Thorndike, it was my good fortune to see him trephine in a case of old injury to the skull, where years later cerebral symptoms developed, showing such persistent and progressive character that operative interference seemed demanded. Trephining was done, and I have never forgotten the look of that bulging, pulseless brain. Dr. Thorndike, with a narrow-pointed bistoury, boldly made a plunge into the brain, but failed to locate the abscess. He was then requested to make another attempt in a forward direction, but replied, "I do not feel warranted in doing more." The stupor increased, and the patient died that night; and at 7 A. M., when we went to the morgue to continue the search for the cause of the compression, it was a disappointment to find that the friends had removed the body immediately after death.

The case, however, impressed me deeply; and owing to the confirmatory tenseness and pulselessness of the brain, I always felt there was an abscess, and determined that should another such case present I would not fail to urge or continue the search.

The experience thus gained proved useful in the case of an United States sailor, whom, through the courtesy of Dr. Clark, Surgeon U. S. frigate *Hartford*, I was asked to see in consultation, in company with Olof Page, M.D., (University of Pennsylvania).

While on shore the sailor had received a scalp-wound, he knew not how. This was seen by the assistant surgeon, who cleansed and closed it by sutures. Suppuration, however, set in, and the wound had to be reopened. Two months later he had an epileptiform seizure, followed by headache, increasing drowsiness, stupor, and a falling pulse, which, when seen, was 46. Ether was administered, and Dr. Clark operated, making a crucial incision over the seat of injury, thereby disclosing a fracture, and with a trephine one inch in diameter, removed a section of bone. The membranes appeared healthy and natural, but attention was called to the bulging, pulseless brain, as indicating deeper trouble. A hollow needle was pushed into the central portion without result, and a second plunge made was followed by a like result. The aspect of the case was such that, on consultation, it was urged that another opening be made following the course of the line of fracture. This was done, and disclosed the brain membranes, as before, apparently healthy, but still unduly tense and full. Here, again, the aspirating needle did not reveal anything; though sanguine still of ultimately finding the seat of trouble, at my solicitation Dr. Clark consented to once more make an attempt, using a pointed grooved director which I had carried. This he employed, and pus welled up along the director. Over an ounce of pus flowed out through the crucial incision which the doctor then made through the intervening brain substance. The cavity was washed out with $\frac{1}{100}$ carbolic solution, and a drainage-tube inserted. The effect on the pulse was instantaneous, as it rose at once to 78. Recovery followed without interruption, and within a few weeks the patient walked to my office to report, the cavity filled and wound closed.

The report of such cases as this of Drs. Bullard and Bradford are instructive as establishing the localization of lesions; and such cases strengthen the confidence and assurance of both the operators and their assistants for

future work. I feel sure that they would in future be more ready to operate; and certainly, but for the experience with the case in the Boston City Hospital, it is not probable that the search for the abscess in the case related would have been continued.

Only recently the boldness engendered bore fruit in an unexpected way. The writer was asked by Dr. O. Page to a consultation over a case under his charge in the German Hospital of this city. The patient was a lad, twelve years of age, who for three or four days had been off his food, moody, complaining of headache, photophobia, with constipation, vomiting and fever. The evening previous he fell out of bed in a convulsion, and when seen had been for twenty hours in an unconscious state, breathing stertorously, and with a slow pulse. Meningitis was the diagnosis made, tuberculosis excluded, from the history and previous knowledge of the boy. He was a wild chap, and the question arose, Could it be of traumatic origin? though previous to the convulsion he had denied any blow or fall on the head. However, on examining the shaved head, a marked irregularity was detected at one spot over the left parietal bone, as though there were a distinct depression. In view of his condition, we determined to cut down to the bone, and, if there were the slightest indication of injury, proceed to trephine. No attempt to check the bleeding was made; but having denuded the bone, we could find nothing to warrant further procedure. The following day the lad was perfectly conscious, continued to improve, and made a good recovery. No trephining was done, but the intention to proceed with it, even on a mere chance of benefit, led to the local bleeding, which did undoubted good, and changed the aspect of the case from one of fatal prognosis to recovery. Yours respectfully,

JOHN TRUMBULL, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING JULY 28, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	1002	539	35.28	8.73	23.76	1.17	4.06
Philadelphia	1,016,758	459	239	27.72	9.02	20.02	5.06	.44
Brooklyn	751,432	404	250	38.50	7.25	30.00	.25	3.25
Chicago	760,000	399	255	50.50	7.25	40.52	1.75	1.50
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	219	123	39.69	8.74	33.58	.92	.92
Boston	407,024	240	129	35.70	13.86	30.24	1.68	2.94
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans	248,000	125	45	23.20	9.60	10.40	.80	.32
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	103	49	45.59	7.76	26.16	2.91	1.94
Pittsburgh	210,000	101	58	42.57	8.91	28.71	9.90	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	—	—	—	—	—	—	—
Charleston	60,145	40	17	22.50	15.00	17.50	—	2.50
Portland	40,000	7	4	42.84	14 28	14.28	—	28.56
Worcester	76,328	29	20	65.55	—	44.85	6.90	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	40	23	42.50	7.50	37.50	—	2.50
Fall River	61,203	56	34	59.07	8.95	53.70	—	1.79
Lynn	51,467	9	0	22.22	9.09	—	—	22.22
Lawrence	40,175	27	10	37.03	11.11	29.60	3.70	—
Springfield	39,952	26	19	69.30	—	53.90	—	7.70
New Bedford	36,298	18	15	61.05	—	61.05	—	—
Somerville	33,307	20	9	35.00	25.00	30.00	5.00	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	9	3	—	—	—	—	—
Chelsea	27,552	8	6	50.00	12.50	50.00	—	—
Haverhill	24,979	11	8	27.26	9.09	27.27	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	5	3	40.00	—	—	—	20.00
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	6	2	50.00	16.66	16.66	16.66	16.66
Malden	18,932	7	4	14.28	28.56	14.28	—	—
Fitchburg	17,534	9	3	—	11.11	—	—	—
Waltham	16,651	7	3	28.56	42.84	28.56	—	—
Newburyport	13,839	6	2	—	16.66	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 3,392: under five years of age 1,872; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,309, consumption 309, acute lung diseases 149, diarrhœal diseases 967, diphtheria and croup 92, typhoid fever 68, whooping-cough 49, measles 44, scarlet fever 40, malarial fever 29, cerebro-spinal meningitis 13, erysipelas two, puerperal fever two, small-pox three. From whooping-cough, New York 20, Washington eight, Chicago seven, Brooklyn five, Philadelphia, Boston and New Orleans two each, Baltimore, Pittsburgh and Cambridge one each. From measles New York 23, Chicago eight, Pittsburgh and Worcester three each, Brooklyn and Baltimore two each, Philadelphia, Fall River and Lawrence one each. From scarlet fever New York 19, Brooklyn and Chicago seven each, Philadelphia and Baltimore two each, Washington, Fall River and Brockton one each. From malarial fever, New Orleans nine, New York six, Brooklyn, Baltimore and Washington four each, Philadelphia one. From cerebro-spinal meningitis, Chicago five, New York three, Springfield two, Philadelphia, Baltimore and Worcester one each. From small-pox Philadelphia three, From erysipelas Brooklyn and Newton one each. From puerperal fever, Chicago and Washington one each.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending July 14th, the death-rate was 15.7. Deaths reported 2,835: infants under one year of age 755; acute diseases of the respiratory organs (London) 164, diarrhœa 130, whooping-cough 68, measles 45, diphtheria 36, scarlet fever 34, fevers 30, small-pox (Preston six, Sheffield two, London, Bolton and Leeds one each,) 11.

The death-rates ranged from 10.6 in Bristol to 28.5 in Bolton: Birmingham 14.8; Blackburn 11.4; Bradford 16.1; Hull 12.4; Leeds 17.5; Leicester 15.6; Liverpool 16.8: London 15.7; Manchester 23.7; Nottingham 13.3; Sheffield 13.1; Sunderland 19.0.

In Edinburgh 16.3; Glasgow 16.4; Dublin 22.6.

The meteorological record for the week ending July 28, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, July 28, 1888.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum	8.00 A. M.		8.00 P. M.	Daily Mean.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	Duration: Hrs. & Min.	Amount in Inches.
Sunday,...22	30.03	64.0	73.0	61.0	100.0		100.0	100.0	S.		N.E.	5		13	G.		R.		.64
Monday,...23	29.92	72.0	88.0	63.0	81.0		82.0	82.0	N.		W.	9		9	C.		C.		.09
Tuesday,..24	29.92	75.0	86.0	66.0	66.0		46.0	56.0	W.		W.	11		6	F.		C.		
Wednes,...25	30.02	72.0	86.0	62.0	48.0		57.0	53.0	N.		S.W.	14		10	C.		O.		
Thursday, 26	30.02	70.0	75.	60.0	58.0		81.0	70.0	N.W.		S.E.	4		3	C.		O.		
Friday, ...27	30.05	64.0	73.0	61.0	80.0		87.0	84 5	N.		N.E.	12		5	O.		O.		.12
Saturday,.28	30.18	60.0	65.0	55.0	52.0		94.0	73.0	N.E.		N.E.	14		12	O.		R.		.01
Mean, the Week.	30.02		78.0	61.00				74.											.86

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FOR THE WEEK ENDING AUGUST 4, 1888.

WOLVERTON, WILLIAM D., major and surgeon U. S. A. Is relieved from duty at Washington Barracks, D. C., and ordered to duty at Fort D. A. Russell, Wyo. By Paragraph 13, S. O. 173, A. G. O., July 27, 1888.

GARDNER, WILLIAM H., major and surgeon U. S. A. Is relieved from duty at Fort McHenry, Md., and ordered to duty at Washington Barracks, D. C. By Paragraph 13, S. O. 173, A. G. O., July 27, 1888.

CALDWELL, DANIEL G., major and surgeon U. S. A. Is relieved from duty at Fort D. A. Russell, Wyo., and ordered to duty at Jefferson Barracks, Mo. By Paragraph 13, S. O. 173, A. G. O., July 27, 1888.

KOERPER, EGON A., major and surgeon U. S. A. Relieved from duty at Fort Keogh, Mont., and ordered to duty at Fort Walla Walla, Wash. Ty. Paragraph 5, S. O. 175, A. G. O., July 30, 1888.

HARVEY, PHILIP F., captain and assistant surgeon U. S. A. Relieved from duty as assistant to the attending surgeon at Washington, D. C., and ordered to duty at Fort Keogh, Mont., Paragraph 5, S. O. 175, A. G. O., July 30, 1888.

BYRNE, CHARLES B., captain and assistant surgeon U. S. A. Is relieved from duty at Washington Barracks, D. C., and ordered to duty at Fort McHenry, Md. By Paragraph 13, S. O. 173, A. G. O., July 27, 1888.

GORGAS, WM. C., captain and assistant surgeon, U. S. A. Granted leave of absence for one month, to take effect on being relieved from duty at Fort Randall, Dak. Paragraph 4, S. O. 177, A. G. O., August 1, 1888.

EWING, CHARLES B., first lieutenant and assistant surgeon U. S. A. Relieved from duty at Fort Lewis, Col., and ordered to duty at Washington Barracks, D. C. By Paragraph 13, S. O. 173, A. G. O., July 27, 1888.

DEWITT, CALVIN, major and surgeon U. S. A. Relieved from duty at Fort Sully, Dak., and ordered to duty at Fort Missoula, Mont. Paragraph 5, S. O. 175, A. G. O., July 30, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING AUGUST 4, 1888.

HUDSON, A., medical inspector. Detached from the "Trenton" and ordered home.

WHITE, C. H., surgeon. Ordered to the "Trenton" via Panama.

URIE, JOHN F., assistant surgeon. Ordered to the Receiving Ship "Franklin."

BATES, N. L., medical inspector. Detached from the "Richmond" and to the "Pensacola."

ANDERSON, FRANK, passed assistant surgeon. Detached from the "Richmond" and to the "Pensacola."

KITE, ISAAC W., assistant surgeon. Detached from the "Richmond" and to the "Pensacola."

JONES, W. H., surgeon. Detached from the "Pensacola" and to the "Richmond."

STONE, E. P., assistant surgeon. Detached from the "Pensacola" and to the "Richmond."

MCCORMICK, A. M. D, assistant surgeon. Ordered to special duty in the Bureau of Medicine and Surgery.

WILBER, F. W. F., assistant surgeon. Reports arrival home having been detached from "Vandalia."

SOCIETY NOTICES.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.— Preliminary Announcement of the Annual Meeting to be held at Birmingham, Ala., September 11, 12, 13, 1888.

The President's Annual Address, W. D. Haggard, M.D., Nashville, Tenn. The Annual Oration, W. F. Hyer, M.D., Holly Springs, Miss. Floating Kidney, with Vicarious Menstruation, DeSaussure Ford, M.D., Augusta, Ga. Gastrostomy, W. B. Rogers, M.D., Memphis, Tenn. The Medical Treatment of Fibroid Tumors of the Uterus, Bedford Brown, M.D., Alexandria, Va. Indications for Operative Interference in Cerebral Troubles, T. O. Summers, M.D., Jacksonville, Fla. A Case of Tubal Pregnancy, Presenting Interesting Medico-Legal Relations, E. P. Sale, M.D., Aberdeen, Miss. Superinvolution of the Uterus following Trachelorraphy, Virgil O. Hardon, M.D., Atlanta, Ga. I. Dermoid Cysts of the Coccygeal Region, and II. Electrolysis in Gynecology and Surgery, E. J. Beall, M.D., Fort Worth, Texas. Alexander's Operation, W. L. Nichol, M. D., Nashville, Tenn. Hysterectomy in Cancer of the Uterus, W. H. Wathen, M.D., Louisville, Ky. The Extravagances and Impracticable Requirements of Modern Antiseptic Surgery, so far as the Country Practitioner is Concerned, J. M. Taylor, M.D., Corinth, Miss. Treatment of Fractures with Plaster-of-Paris Splints, W. F. Westmoreland, Jr., M.D., Atlanta, Ga. The Present Status of Electro-Therapeutics in Gynecology, J. R. Buist, M.D., Nashville, Tenn. Antiseptics in Surgery and Gynecology, F. T. Merriwether, M.D., Asheville, N.C. The Attitude of Removal of the Uterine Appendages for the Cure of the Convulsive Neuroses, W. Locke Clew, M.D., Birmingham, Ala. Interesting Cases of Surgery, R. M. Cunningham, M.D., Pratt Mines, Ala. My Antiseptic Bags, or Practical Aseptic Surgery, J. W. Long, M.D., Randleman, N. C. The New Departure in Uterine Therapeutics — The Dry Method, T. A. Means, M.D., Montgomery, Ala. A Study of the Various Methods of Treatment of Laceration of the Perineum, and Rectocele, with a Report of Cases, J. H. Blanks, M.D., Meridian, Miss. Report of a Case of Spinal Concussion, Jno. R. Page, M.D., Birmingham, Ala. Fractures of the Forearm, Jno. Brownrigg, M.D., Columbus, Miss. Some Practical Thoughts in Surgery, James Guild, M.D., Tuscaloosa, Ala. Perineal Lacerations, M. C. Baldridge, M.D., Huntsville, Ala. Electrolysis in the Treatment of Urethral Strictures, S. M. Hogan, M.D., Union Springs, Ala. The Field and Limitation of Laparotomy, I. S. Stone, M.D., Lincoln, Va. Operative Procedures in Hypertrophy of the Prostate, R. D. Webb, M.D., Birmingham, Ala. Discussion: Abdominal Surgery. Drs. J. Herbert Claiborne, Duncan Eve, Paul F. Eve, W. T. Briggs and others will present papers, but as yet have not stated their subjects.

W. D. HAGGARD, M.D., *President.*

WM. E. B. DAVIS, M.D., *Secretary.*

ERRATUM.

In the JOURNAL of August 2d, page 105, column 2, line 44, in the sentence "Whether these hallucinations are the resultant of abnormal cerebral circulation *and* of irritation of already diseased aural ganglia or sensory-nerves, etc." for *and* read *or.*

Original Articles.

PEDUNCULATED PAPILLOMA OF THE BLADDER: SUCCESSFUL REMOVAL BY PERINEAL OPERATION.[1]

BY F. S. WATSON, M.D.

E. B., aged thirty-seven, was alarmed three years since by a very profuse hæmorrhage into the bladder. The urine, he said, was black with blood. This condition came on without any apparent cause. Ever since he has had intermittent attacks of hæmaturia. The urine sometimes has remained free from blood for several weeks at a time. Until very recently urination has been painless and natural as to frequency. He has had two or three attacks of retention due to the presence of clots in the bladder. Has often passed large clots, but never any fleshy bits until within a fortnight. He has lost about seventeen pounds weight during the last three years, but is still strong and in very good condition.

The urine at the time of his first visit contained bright blood in moderate quantity. Some pus, two or three small phosphatic concretions, which he had noticed for the first time in the preceding day or two, and a good many small shreds, which, microscopically, were seen to be the most typical examples of a benign papillomatous growth.

Rectal examination gave a slightly greater sense of resistance of the bladder wall to the finger over a small area just above the right lobe of the prostate. There was also tenderness on pressure at the same point. This was interesting to me, as it has been generally stated that unless cancerous these growths could not be detected by touch in the rectum. Nevertheless, I have been able to locate the growth exactly, previous to operation, in this case, and in one which I operated upon by the supra pubic method last summer by rectal touch. In the former case the growth was small and delicate. Dr. Cabot confirmed the observation in that instance. Bimanual examination was negative.

On April 23d, with the assistance of Drs. J. W. Elliot, H. W. Cushing and R. Lovett, I performed the perineal operation. Opening the membranous urethra on a grooved staff, the prostatic urethra and vesical orifice were rapidly dilated to admit the forefinger, which, upon entering the bladder, came at once upon a villous tumor, whose free surface was about the size of a small tangerine orange. It was attached to the bladder by a pedicle about one-quarter inch in length, and of the breadth of the forefinger, just above the right lobe of the prostate as per diagram. After some difficulty the pedicle was seized with a strong pair of curved forceps and twisted and chewed off, the larger portion of the tumor, which I show here, coming away in one piece. The stump of the pedicle and a smaller part of the tumor which remained behind were removed with curettes. Hæmorrhage was free during the operation. The bladder was washed out with a hot solution of boracic acid four per cent.; and this perineal drainage-tube (of which I will speak in a moment) was tied into the bladder. The operation was long and tedious. The patient had delayed reaction, the pulse being very weak and 120 for twenty-four hours afterward. Bleeding continued to be steady and free for twenty-four hours, then gradually diminished, *ceasing entirely on the third day.* Vesical tenesmus was frequent and severe for twenty-four hours, due to large clots plugging the orifice of the tube. Throwing an ounce or two of boracic solution into the bladder dislodged them, and relieved the patient at once until another one came into the tube.

Since the first twenty-four hours this patient has declared that he never felt better in his life. There was no rise of temperature, except for a few hours one week from the date of operation, due to a slight epidydimitis. I removed the perineal drain on the fourth day. He was moved from bed to couch on the fifth day. The urine is entirely free from blood, and only contains a very little pus, which comes from the prostatic urethra. Frequency of urination, once in four or five hours; and he can hold it all night. The perineal wound is nearly healed, and recovery may be said to have practically taken place in ten days from the date of operation.

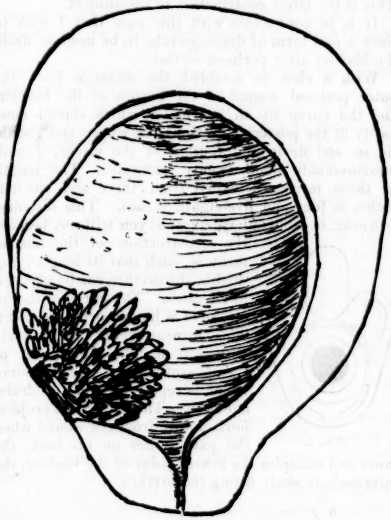


FIG. 1.

Three months have elapsed since reporting this case, and at this date of publication the patient is entirely free from all symptoms, and perfectly well.

In the last patient from whom I removed a tumor of the bladder I chose the supra-pubic route. The patient made an excellent recovery in nine weeks. I contrasted, then, the two operations, and pointed out their relative advantages and disadvantages, which I will not repeat now, but would only add that the operation should be selected according to the nature of the tumor as seen by the cystoscope, or felt by digital exploration through the perineum.

In those cases in which the growths can be removed by the perineal route I believe it is best to do so, as being less dangerous, and securing a shorter convalescence. If they are found to be too difficult to remove thus, the supra-pubic operation should be proceeded to at once.

[1] Read at the meeting of the Surgical Section of the Suffolk District Medical Society, May 8, 1888.

The perineal operation I consider much the more delicate and difficult.

In connection with the diagnosis of these cases, it is of interest to refer to a series of fifteen published in the *Lancet* of April 21, 1888, by Dr. Nitze.

The diagnosis was very accurately established in all by the cystoscope of Nitze, which Dr. Newell showed to this Society earlier in the year. In two of the cases hæmorrhage, although considerable, did not prevent a good view of the growths. The use of this instrument will, in all probability, render the employment of the other means of diagnosis which we have hitherto relied upon, unnecessary in many instances.

In eight of these cases the tumor was extirpated. In five the operation resulted in cure. One died from extension of malignant disease. In seven the supra-pubic method was employed. In one (a female) the tumor was removed through the dilated urethra. The operations were performed by different surgeons. This is the latest contribution to the subject.

It is in connection with this case that I wish to show a new form of drainage-tube to be used to drain the bladder after perineal section.

With a view to establish the distance from the outer perineal wound to the bottom of the bladder, and the curve of an instrument which should most easily fit the posterior urethra, and whose end should lie in and drain the bottom of the viscus, I took measurements upon twenty cadavers. The length in those measured varied from three and one-half inches to four and five-eighth inches. This distance, however, became unimportant, as you will see, because the construction of the instrument is such that its length lying within the urethra can be adjusted to all cases. The curve of the instrument is its important element. The measurements were made with soft metal. The result of the measurements gave the curve which is represented in this drainage-tube. The outer end projects horizontally from the wound when the patient lies on his back, the inner end occupies the lowest point of the bladder, the intermediate shaft fitting the urethra.

FIG. 2.

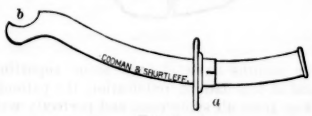


FIG. 3.

To complete the instrument it was necessary to have a plate attached to the tube by which to fasten it to the body, which could be pushed forward or backward on the tube according as the distance from the wound's surface to the bladder should vary in each case. This, as I have said, makes the difference in this distance in each case unimportant, and accommodates itself, also, to the extra length in cases of hypertrophied prostates. Accordingly, I had a plate fitting the perineum placed on the tube. The chief point in the successful construction of the instrument lies in a collar (*a*) of the depth of one-quarter inch, which projects from the front surface of the plate and embraces the tube, so that ordinary pressure will not force the plate backward or forward along the tube, but it *can* be adjusted at a longer or shorter distance from the end of the instrument by firm pressure, and will remain wherever placed. In this way the varying lengths of the canal to be traversed by the tube can be met at once by the instrument, the placing of the plate at any given point in the course of the tube being all that is necessary to make a longer or shorter drainage-tube, the flow of water from the tube on its being passed into the bladder being the guide as to the point on the tube at which to fix the plate. Tapes led through slots cut in the four corners of the plate (Fig. 2) attach it to a band going round the waist, and hold it in place. A rubber tube attached to the outer end of the gutta-percha drain leads the urine into a urinal.

The tubes are designed to be of various calibres to meet different indications. The one used in this instance was 34 (French). In case of hæmorrhage some of the tubes are supplied with a raised flange just above the eye (*b*) so that they can be converted into a canula *à chemise*.

The question as to the employment or non-employment of drainage-tubes after perineal section is often discussed and contrary views expressed. My own belief is that they are sometimes useful and sometimes not. Previous to this I have watched two cases after removing tumors of the bladder. No perineal drainage was supplied in one, and insufficient drainage in the second. The vesical tenesmus in both was excessive and painful to watch, and was entirely referable to the presence of blood-clots. In this last case I was enabled to relieve the tenesmus almost immediately by washing the clots out of the tube, and keeping the bladder empty.

I feel no doubt as to the desirability of using a large drainage-tube in cases where free hæmorrhage is to continue (as it almost always does after the removal of vesical growths) for, at any rate, twenty-four or thirty-six hours, or until the bleeding decidedly lessens; then it may be removed with advantage. The employment of such drainage-tubes are also indicated generally for a longer period after perineal prostatotomies, where it is desired to keep the wound open, a fact demonstrated and emphasized by Mr. Reginald Harrison. After operations for deep stricture the use of a drain through the perineal wound for a day or two has seemed to me to diminish the chances of constitutional disturbance, but here the tubes of smaller diameter will answer better. It is hæmorrhage into the bladder that calls for the larger sizes, and that, of course, is especially liable to occur after removal of new growths, or in rupture of the viscus. The tubes are, as you see, made of polished hard rubber, with rounded ends and very large eyes, and ensure the largest interior calibre, together with the thinnest possible walls.

— The editor of a Western journal made a pathetic appeal on behalf of the condemned murderer Maxwell. Among other things he said: "God knows that the picture of that mother and sister hovering like *angles* about the prison bars is enough to move a heart of stone, but more particularly considering the medical aspects of the affair I think the governor should interfere in behalf of the condemned Maxwell." How do Prellar's relations view this angular movement?

TWO CASES OF INCISION INTO THE HIP-JOINT, WITH OBSERVATIONS AS TO "DISTRACTION" IN HIP-DISEASE.[1]

BY E. H. BRADFORD, M.D.

THE writer wishes to place upon record two cases of direct incision into the hip-joint at an early stage of hip-disease, done for the purpose of checking the night cries, which were exceptionally severe (fourteen and fifteen times during the night), and which other measures had failed to control. In both of the cases it was supposed that the joint contained pus within a resistant joint cavity. In one of the cases, a girl of six, the incision was not perfectly done, and gave incomplete drainage, and no benefit was obtained by the procedure. The "night cries" gradually subsided, and the patient eventually made a good recovery, which was not retarded though not aided by the incision.

In the second case, a boy of four, a small quantity of thick pus was evacuated and the patient's symptoms decidedly relieved, but not until a short time after the operation. Two weeks after the operation the night cries had diminished so that they were not present, or only occasional, while before they had persisted for weeks at a rate of fourteen and fifteen cries a night. The immediate effect of the operative interference appeared not to be beneficial, and the sensitiveness of the joint was increased for a few days; but as soon as drainage from the joint became well established, and compresses and pads and bandages incidental to aseptic dressings were discontinued, the night cries diminished noticeably. No difficulty was encountered in opening the joint. A straight incision was made behind the trochanter major, extending above it. After the skin and muscles were divided and separated, the forefinger was thrust down to the joint and used as a director, the capsule was reached at the upper and back part of the joint. This was opened and the opening dilated. No distension of the capsule of the joint could be felt, and but a small quantity of thick pus was evacuated. The capsule wall, however, was found to be comparatively soft. After a slight pull upon the limb the femur was pulled away from the acetabulum and the finger could be inserted between the acetabulum and the head of the femur; both were found to be covered with granulations. No explanation could be found for the persistent night cries. The incision, etc., were done under aseptic precautions. The treatment after the operation was the same as before; namely, fixation by means of a fixation frame, and extension by an extension splint, and at the end of three weeks the boy was allowed to walk about on his crutches, elevated shoe, and wearing his extension splint.

It cannot be claimed that the amount of benefit obtained in these cases warranted the operative interference. For even in the second case perforation of the capsule and relief of the intra-capsular tension, and consequent extreme sensitiveness would have taken place spontaneously, and in all probability the drainage from the joint would have been better than that at first afforded by the incision. In the second case, however, relief of the symptoms was obtained somewhat more speedily after the incision than if left to a natural course.

In a large majority of cases the night cries are readily checked by extension and fixation. It seems reasonable to explain the exceptional cases where relief is not obtained in this way on the supposition that the joint, as in Case II, contained pus within a firm and resistant capsular wall, and that the bone of the femur and acetabulum are sensitive on undue pressure caused by reflex muscular spasm, secondary to the increased tension in the joint cavity.

In some instances the hypersensitiveness may be due to an abscess of the epiphysis of the head of the femur, and relief obtained, as has been shown by Macnamara, by perforating the head of the femur. Such cases, however, must be exceptional in children. It is possible that stretching the sciatic, as recommended by Macnamara, thus temporarily paralyzing the muscles and preventing spasm, may afford relief in extreme cases. But it would appear that less radical procedures were more practicable, and that we are to look to a perfection of "distraction," that is, mechanical separation of opposing bone surfaces of the joint as the most practicable method of relief. It has been denied that this, that is, distraction, is possible, but the frozen section of the case of hip disease reported by Lannelongue (the subject having been frozen with the affected limb pulled upon) demonstrates that distraction actually takes place.

If in an adult cadaver with normal a hip-joint, the muscles having been divided, the limb be pulled upon in a direction parallel to the axis of the body, it will be found that distraction does not take place. If in a fœtus of full term it will be found that it does. In Case II here reported, the fact of "distraction" could be readily determined. When the finger was placed upon the head of the femur it was found to be impossible to push it between the head of the femur and the acetabulum, the two bone surfaces being in contact. If, however, the limb was pulled upon by a force estimated at five pounds, the bones separated, and the finger could be readily inserted between the rim of the acetabulum and the head of the femur, the separation being about one-quarter inch. If the pull was discontinued the finger was caught by the opposing bones, and pressed upon with noticeable pressure.

In another case, a boy of nine, with hip disease, where a periarticular abscess was incised, the same observation was made, and the femur readily distracted from the acetabulum.

Through the kindness of Professor Dwight and Dr. Conant, of the Harvard Medical School, a number of normal adult hip joints were examined to determine the causes of the resistance to a distracting force.

It would appear that the chief cause of resistance was the cotyloid ligament, which in a normal adult hip is practically a cartilagineous collar holding the head of the femur in a tight socket. Direct pull on the femur in the line of the axis of the body causes the head of the femur to come in contact with the resistance of this non-elastic collar, and also encountering the resistance of the Y ligament. If the limb is slightly flexed and abducted, the femur can be pulled away from the socket if a fair amount of force be employed, showing that the influence of atmospheric pressure is not as great as has been supposed. If the limb is adducted it will be found that a pull in the line of adduction will bring the femur against the lower rim of the acetabulum.[2]

[1] Read at the meeting of the Surgical Section of the Suffolk District Medical Society, May 8, 1888.

[2] The experiments were made on dissected alcoholic specimens, where the knee-joint had not been opened, and with the capsule intact.

In young children, (it is to be borne in mind), the cotyloid ligament is not as strong or as developed as in adults, and the acetabulum is much smaller, the bony rim of adults being cartilagineous in children. It is also true that in tuberculous osteitis in the hip, as in other joints, the cartilages and ligaments at an early stage become softened and incapable of resisting a distracting force. Where the head of the femur has been absorbed and no anchylosis takes place, distraction occurs from a slight force. The direction of force in which distraction encounters the least resistance in a normal limb is with the limb slightly flexed and adducted.

FIVE CASES OF PERINEAL SECTION WITH EXCEPTIONAL COMPLICATIONS.[1]

SERVICE OF DR. C. B. PORTER,
Surgeon to Massachusetts General Hospital.

REPORTED BY DR. A. K. STONE.

CASE I. — CURETTING THE BLADDER FOR CHRONIC CYSTITIS.

J. A. W., aged forty-seven.

November 5, 1887. For the past seven months the patient has been extremely troubled with frequency of micturition. During the day he passed urine every fifteen to twenty minutes, and at night the intervals were never longer than one hour. At times he has severe vesical tenesmus, when he is obliged to keep his penis in a urinal for hours at a time, on account of the constant drizzle of urine. Before micturition there is pain, referred to the end of the penis. At times this pain runs backwards along the course of the entire urethra. Blood-clots have been frequently passed, and the urine contains abundant sediment, with shreds of so-called mucus.

Urine is pale; slightly alkaline; specific gravity, 1013; albumen, trace; sediment considerable; normal blood; little pus; numerous small round cells; crystals of ammonic urate.

Examination by Dr. Porter under ether. No stricture; no enlargement of the prostate; no stone in the bladder.

For the next three weeks the patient's bladder was washed out from time to time with boracic acid solution, 1 to 150. The bladder was extremely intolerant, and the introduction of the catheter always set up violent tenesmus and caused great pain. Only about one ounce of the solution could be injected before still more severe contractions would be excited, and the wash fluid expelled with violence. The tenesmus would continue several hours after the catheter had been withdrawn. Urine still contains pus and mucus and a trace of albumen.

As the patient had made no perceptible gain during his three weeks' stay in the Hospital, Dr. Porter decided to drain the bladder, and for this purpose, on the 26th of November, performed perineal section in the usual manner. After the bladder had been opened, the surgeon's finger was introduced into the bladder, which was found to be firmly contracted, even under ether. The walls were velvety, as if covered with exuberant granulations. The entire surface of the bladder was then thoroughly curetted and washed out, first, with corrosive sublimate (1–5000), then with hot phenyl (sulpho-napthol). A chemise canula was tied in. In the afternoon the patient had intense pain, which was relieved by washing out the bladder and removing a number of blood-clots. A rubber tube was substituted for the canula.

Five days later, the record says that the patient has been very comfortable and has slept well. His urine contains no blood. The drainage-tube was removed from the bladder twenty-five days after the operation. The urine came about equally by the penis and through the perineal wound. The patient at once regained control of the sphincters of the bladder, and, instead, passing urine every fifteen or twenty minutes, as he did before the operation, the intervals were about one hour's duration. Three days after the tube had been withdrawn, there came an increase in frequency of micturition, accompanied by pain and tenesmus in the rectum, which was not relieved by free catharsis. Examination of the rectum showed an abscess of the prostate, which was opened and drained into the rectum. The rectum was packed with iodoform gauze, which was removed two days later. The rectum was then washed with hot phenyl twice a day.

From that time on the patient steadily gained in flesh and strength. For a few weeks the bladder was washed out every day, but now with very little pain or discomfort. Almost all the urine is passed by the penis. For a day or two all will be passed by the penis: then, for a few days, a little will come by the perineum. The urine is clear and contains no pus. The intervals between micturition are now two hours to two and one-half hours during the day; while the patient sleeps nearly all night, passing his urine but once or twice. There is a slight stinging sensation after each micturition. On the 6th of February, fourteen weeks after entrance, no urine having come by the perineum for six days, he was discharged.

Remarks. This case shows how tolerant the bladder may be of even severe operative interference. The idea of curetting the walls of the bladder was forced upon the surgeon by the nature of the case. It was an emergency of the operation, and had to be met and settled at once; and the wisdom of the decision is clearly shown by the after-history. I have been able to find no similar case recorded in the "Index Medicus."

NOTE.— Patient reported July 3, 1888. Has gained twenty pounds in weight. Is able to do a full days work without any discomfort from frequency of micturition. Never has to get up more than once during the night to pass urine and usually holds it all night long. No perineal fistula.

CASE II. TUBERCULOSIS OF THE MEMBRANOUS PORTION OF THE URETHRA, RESULTING IN STRICTURE AND URINARY INFILTRATION.

O. C., aged thirty-two, box-maker, New Hampshire.

Patient has a good family history, and his previous history, up to six or seven years ago, has been good. He denies ever having a gonorrhœa or other venereal disease, and he never received any blow or injury in the perineum. Six years ago he began to have pain, starting in the small of the back and passing downwards and forwards towards the bladder. This pain was described as being like a pleuritic pain. The pain finally settled in the bladder and was very severe, and increased by any sudden movement or jar. Four years ago he had a swelled testis, and about the same time he began to be troubled with difficulty of micturition. The urine contained blood and considerable

[1] Read at the meeting of the Surgical Section of the Suffolk District Medical Society, May 8, 1888.

sediment. At times he has passed small particles, possibly of phosphatic nature. None, however, have been passed lately.

Such has been the condition up to four months ago, when he was taken one night with partial retention, being able to pass urine only in drops. Later, there was complete retention, and the urine had to be withdrawn with a small silk catheter, which he was taught to pass himself. Passage of this instrument caused considerable irritation to the urethra, so that for days he could pass his urine only in drops.

About eight or nine days ago a swelling appeared in the perineum. This tumor was finally opened by his physician and pus evacuated, and soon after urine began to escape by this opening. Since that time urine has come both by penis and perineum.

Patient is pale, emaciated, and very weak. Heart and lungs negative. Micturition about every hour. Urine of normal color; specific gravity, 1010; albumen, ¼ %; much sediment; much mucus and pus; bladder-cells in excess.

January 9th. Operation by Dr. Porter, under ether. Strictures, one three inches from the meatus, and one in the deep urethra, divulsed. A grooved staff was then passed, and the urethra opened through the perineum. The old fistulous tract was curetted. Deep down in the perineum a large amount of cheesy material was found; also a tract running off towards the left buttock, which discharged a thin, watery pus. The entire fistulous tract was laid open and thoroughly curetted. A catheter was tied in, and the wounds packed with iodoform gauze. The cheesy material was examined by Dr. W. W. Gannett, and the giant cells of tuberculosis found.

Eighteen days after the operation the catheter was permanently removed. It had worked perfectly during this time, and given the patient very little inconvenience. Urine then came entirely by the perineal wound. The patient has suffered but little pain, but is weak and miserable, and has a very poor appetite. He was given cod-liver oil and iron.

Ten days later the patient sat up for a short time in a wheel-chair. General condition is about the same. The urine is all passed by the perineal wound.

Two weeks later the patient was discharged at his own request. The patient has been up each day in a wheel-chair, and has grown decidedly stronger; eats and sleeps much better. The wound is still indolent, and shows little inclination to close. Sounds have been passed from time to time, but the urine is still passed by the perineum.

Remarks. The only gain for this patient was ability to evacuate his bladder without pain. It is of interest on account of the non-venereal history and the discovery of the giant cells of tuberculosis which in all probability were the source of all the trouble.

Case III. Extravasation from Stricture at the Meatus.

January 5, 1888. J. C. S., machinist, aged sixty-two.

The patient has had a stricture for twenty years. Several times in the last few years he has had retention, which would last for several hours. At the end of this time a plug of mucus would be passed, and the urine would then flow freely. No instruments have ever been passed. For the past few months the size of the stream has been gradually growing smaller and smaller. There has been some cystitis. The meatus has been very small, and at times has had to be probed with a needle to enable the patient to start his urine.

Last night the patient found himself unable to pass any urine. However, he suffered no special discomfort, passed an easy night, and kept about his work until noon to-day. At this time he noticed that his scrotum was beginning to swell, and he began to suffer both from the distension of his bladder and of the infiltrated tissue.

Patient entered the Hospital at 8 P. M. in great pain and distress. Temperature 103°, pulse 112 and intermittent. The bladder was as high as the umbilicus. The scrotum was as large as a child's head and very tense. The penis was much swollen and distorted. The glans was not visible, and the urine dribbled through the long, œdematous foreskin.

Operation by Dr. Porter, under ether. The scrotum was divided along the median raphé, and considerable bloody urine was evacuated from the tissue. The foreskin was then split upon the dorsum. The meatus was found to be practically closed, and would not admit even the finest filiform bougie. With some difficulty, a meatus was made. Then a filiform bougie was passed as a guide to the divulsor. Strictures were shown to exist both in the penile and deep urethra. After the divulsor had been passed, it was found impossible to introduce a No. 12 gum-elastic catheter. A Gouley staff was passed upon a filiform guide, and upon this staff perineal section was performed. A large quantity of ammoniacal urine was then drawn from the bladder. The bladder was washed with corrosive sublimate (1–5000), a catheter was tied in, and the wounds packed with iodoform gauze.

The patient reacted quickly after the operation. His pulse steadily improved, and he suffered practically no pain or discomfort. The wounds soon cleared and then began to granulate rapidly.

Three weeks after the operation the catheter was left out. The patient then passed all his urine by the penis. Four days later sounds were passed. These caused the patient considerable pain. That night he had a chill, and was very miserable for two or three days.

Four weeks and a half after the operation he sat up, and on February 13th, thirty-eight days after entrance, he was discharged. The only difficulty remaining was a granulating cleft in the scrotum. There was no pain or scalding on micturition, and no urine was passed by the perineal wound.

Remarks. Though there were other strictures besides the one at the meatus, yet this seemed from the history to be the one which was the cause of the trouble. The extravasation probably took place in the deep urethra at the weakest portion, and it was probably this spot that caused the inability to pass a catheter during the operation.

Case IV. Traumatic Rupture of the Urethra: Hæmorrhage Eighteen Days Later.

G. D., aged nineteen, mechanic, Haverhill, Mass. January 23, 1888.

Five days before entrance the patient fell down an elevator-well, striking astride a beam. For two or three days he was able to pass his urine in small amounts, but only with great difficulty and pain.

For the first day after the accident there was blood in the urine. Two days ago his urine stopped. An attempt was made to introduce a catheter, but without success. However, upon the withdrawal of the catheter, the urine came freely. Last evening it became necessary to aspirate the bladder. The patient entered with his bladder dilated to the umbilicus, and having passed no urine since the aspiration. His scrotum and perineum and buttocks were much bruised and ecchymosed.

Under ether, Dr. Porter, first having cut the meatus and keeping the beak of the catheter against the roof of the urethra, was able to introduce a gum-elastic catheter with ease. The catheter was kept in place for a week, and during this time the patient suffered no special inconvenience. On removal of the catheter, there was no difficulty of micturition, except a slight scalding.

Three days later sounds were passed. These gave no inconvenience, and the patient was up and about the ward and expecting to go home the following day, when he complained of general "bad feeling" on the morning of the third day after the passage of the sounds. In the afternoon he had a slight urethral hæmorrhage, which was controlled by ice. The next morning a catheter was again tied in. This caused considerable discomfort, and was removed on the following morning, and the bladder washed out with boracic solution. During the next half-hour the patient passed about a pint and one-half of blood by the urethra. He became quite blanched. There was a tumor in the perineum. Dr. Porter at once decided to do perineal section. After etherizing the patient, a staff was passed into the bladder and perineal section performed. A large clot was turned out from the perineal tissues, and in the midst of this infiltrated mass three spurting arteries were found and tied. A number of other small bleeding points were also secured. A catheter was tied in and the wound packed with iodoform gauze.

There was considerable difficulty in keeping the catheter in place and in running order, and from time to time the urine would break through the perineum, escaping from the bladder around the catheter. The catheter was removed in twelve days. The urine was then passed by the perineum. Ten days later sounds were passed, and after this the urine was passed partly by the penis and partly by the perineum.

Two weeks later only a few drops of urine escaped by the perineal wound. Bougies have been passed several times. There is still considerable tenderness in the anterior urethra.

Fifty-one days after admission patient discharged.

Remarks. The interest in this case lies in the fact that the secondary hæmorrhage took place eighteen days from the injury, and three days from any operative interference. In the meantime there had been no special pain or tenderness. There was no hæmorrhage after the vessels were once tied.

CASE V. EXTRAVASATION SHORTLY AFTER PASSAGE OF AN INSTRUMENT.

Longshoreman, colored, aged forty-five.

Patient had his first attack of gonorrhœa about twenty years ago, and has had some urethral discharge nearly ever since. Several times he has had fresh attacks, and several times chancroidal sores. For some years past he has noticed a gradual diminution in his stream of urine. Two years ago he had retention, which was relieved by catheterization. He was then given a catheter by his physician, and told to pass it every few weeks. For the past six months he neglected to do so, and during the latter part of this time his stream has been rapidly growing smaller and smaller. Night before last, he determined to try to pass his catheter. The catheter entered the stricture, which was about two inches from the meatus, and he tried to force it through, but was obliged to withdraw the catheter on account of pain. Some blood followed the catheter. The patient went to work the next morning. During the day his penis and scrotum began to swell, but he still kept at work. Next morning, after passing an uncomfortable night, things were still worse, and he sent for his physician, who advised his coming to the Hospital. This he refused to do until evening, when he entered at 8.30 P. M. Both penis and scrotum were extremely swollen, the penis measuring twelve inches in circumference.

Operation by Dr. Porter, under ether. The prepuce, which was nearly three inches in length, was laid open upon the dorsum. A filiform guide was then introduced with considerable difficulty through a stricture situated about two inches from the meatus. The divulsor staff was then passed, but the smallest-sized divulsor could not be forced through the tough, cartilaginous stricture. The staff and guide were withdrawn, and the scrotum and perineum were split in the median line and the urethra opened in the perineum. Through this opening a large amount of foul ammoniacal urine was withdrawn from the bladder. The divulsor staff was then passed from the perineal opening forwards, and the divulsor forced with great difficulty through the anterior stricture. The catheter was then passed and tied in. The skin of the penis was freely scored to allow the escape of urine from the infiltrated tissues.

The patient was comfortable on the next day, but on the second day had a chill in the afternoon, and the catheter was removed. Four days after the operation, the penis, which was still very large, began to slough. This was a decided surprise, as the dark skin had prevented any discoloration from showing, and everything appeared to be progressing favorably. The penis and scrotum were kept in phenyl poultices for the next two weeks. During this time large and very foul-smelling sloughs separated from the penis, leaving only strips of healthy tissue along the sides and underneath, and also the under part of the foreskin.

At the end of the two weeks the sloughs had all cleared off, and large granulating surfaces appeared between the strips of healthy skin. These strips were then turned upon the dorsum of the penis, so as to cover in as much granulating surface as possible. The long portion of the prepuce was turned downwards and backwards. The dressing is now done with ung. acidi boraci. The prepuce did not hold in place, but the strips materially aided in closing the granulating surfaces. The prepuce was then bound down with a strip of gauze, and after some time was made to adhere to the under side of the penis.

During the time that the sloughing and granulating process was going on the patient suffered intensely from erections. He would have them repeatedly the same night, and their frequency was unaffected by bromide or opiates.

The patient never passed urine by the perineal wound, but through an opening into the urethra at about the point of stricture, two inches from the meatus. After the passage of a bougie part of the urine would come by the meatus and part by the urethral fistula. The wound in the perineum had entirely healed; the cleft of the scrotum was granulating rapidly. The upper portion and sides of the penis had closed entirely, and the under portion was closing in.

At the end of eight weeks the patient was discharged, to return at some future time for operation upon the urethral fistula.

Remarks. In this case the anterior stricture was the only one present, and the urethra was ruptured just behind it. This accounts for the enormous infiltration of the penis.

The medical after-treatment of these cases was practically nothing. There was no call for diuretics, as the presence of the catheter in the bladder, or the relief caused by divulsion of the stricture, in some "reflex" manner seems to increase the flow of urine.

All the patients reacted quickly after the operations, and there was little or no call for stimulants. In only one case was there a chill soon after the operation. Here the catheter was promptly removed, and the patient given quinine. In three of the cases the catheter was retained for considerable time. There was no trouble from urethritis, and, indeed, so long as a catheter is in good running condition, patients at the Hospital seldom suffer any special inconvenience from its use. The catheter is held in place by a ligature tied about the catheter, and the ends are brought down along the side of the penis and held in place by a strip of plaster about an inch in width. A rubber tube, with a glass joint to enable one to tell at a glance whether or not the urine is running, is attached to the catheter and carried into a bottle which is suspended at the side of the bed. By this means all the urine is removed from the bladder by siphon. All wounds of this nature are packed after the operation with iodoform gauze. In a few days the gray sloughing condition disappears, and a dry, red surface remains. This condition will tend to remain if iodoform dressing is continued. If, however, the dressing is changed to a charpie dressing, soaked in balsam of copaiba, the granulations spring up almost immediately, and the granulation progresses much more rapidly than under any other dressing.

The only exception to be noted to this statement is in wounds in tuberculous subjects, and of this Case II is a good example.

TWO FORMS OF SKIN TUBERCULOSIS.

BY JOHN T. BOWEN, M.D.

As a result of the discovery of the tubercle bacillus, and of the greater precision offered to the diagnosis of tubercle by the histological advances of the last few years, attention has frequently been called to certain lesions of the skin, often obscure in their clinical appearances, which on pathological examination have proved to be examples of tuberculosis. Of late the examples have rapidly multiplied and a source of external infection has been demonstrated in many instances. Of especial interest as illustrating possible modes of infection, may be mentioned four cases observed in Billroth's clinic, and reported by v. Eiselsberg.[1] In the first case the patient, a girl of sixteen, presented on the lobe of the ear, a hard, reddish-blue, non-ulcerated nodule, which appeared after wearing a piece of yarn, passed through the hole made for earrings. The second case is of an ulcer of the upper arm developing from a stab wound. In the third case a woman, aged fifty, after scratching an acne pustule on the face, developed at this spot an ulcer with thin jagged border. At the time this lesion appeared the patient had been washing the clothing of a woman ill with tuberculosis. In the fourth case there appeared a fistula on the arm, with a bluish appearance of the surrounding skin, at the site of a subcutaneous injection of morphia. Patient was a girl of twenty. In all of these cases the lesion was excised, and the characteristic appearances of tubercle found, as well as the tubercle bacillus. Other cases could be enumerated where the infection was derived from animals, for example, that of a veterinary surgeon who received a wound while opening the body of a tubercular cow, from which followed a tuberculosis of the skin, tuberculosis of the lungs, and death.[2]

Most of these observations unfortunately offer us but little light to guide us to a clinical diagnosis; indeed, the diagnosis has not usually been correctly made before the microscopical examination, and the whole subject is at present surrounded with great uncertainty and confusion. Two forms have, however, been extricated from this confusion, which are believed by some to represent distinct clinical types of tuberculosis; namely, a miliary form, and secondly the verrucous tuberculosis, tuberculosis verrucosa cutis of Riehl and Paltauf. (Lupus, which in the present state of our knowledge must also be regarded as a form of tuberculosis, offers us in most instances well-defined points of difference from these two types.)

I. Miliary Tuberculosis. This form has been met with only in subjects affected with rapidly-progressive tuberculosis of internal organs. Chiari[3] reported the first case of this type, and was followed by Jarisch[4] with the report of a case where the probable diagnosis was made *intra vitam*. Since then cases have been reported by Riehl, Schwimmer, Finger, and by several French writers. Chiari examined 7,000 bodies, (of which about sixty per cent. were tubercular), with reference to these lesions, with the result of finding them in five cases only, all on the lower lip. These lesions are described as shallow ulcers, situated at the juncture of the mucous membrane with the skin at the entrance to the mouth, nose, anus and vagina, and also upon the ear. The edges of the ulcer are said to be characteristic, being moderately firm and made up of a succession of small, jagged indentations, having an appearance as if "gnawed," (ausgenagt). Miliary tubercles, in the form of yellowish-white, transparent nodules, can be seen in parts of the ulcer. These lesions are rapidly progressive, all changes occurring by a degeneration of the miliary tubercles, and by the confluence of the small ulcers. This form has been often referred to as representing a true tuberculosis of the skin, and has been cited as an argument against the tubercular nature of lupus.

A case undoubtedly belonging to this class came

[1] Wiener Med. Wochenschrift. 1887. No. 53.
[2] L. Pfeiffer. Zeitschrf. f. Hygiene. III Bd. s. 189.
[3] Wiener Med. Jahrbücher, 1877. 3 Heft, s. 328.
[4] Vierteljahresschrift f. Dermat. und Syph., 1879.

under the writer's notice in Vienna. The patient, who was far advanced in tuberculosis of the lungs, presented a shallow ulcer at the edge of the ala of the nose, and a similar one along the lower edge of the septum. These ulcers were very sensitive to the touch, having a jagged edge, considerably infiltrated. Antispecific remedies were tried, although tuberculosis was suspected, but with no influence on the lesion. Some time afterward, while studying in the pathological department, I discovered this patient on the autopsy table, and was able to obtain the lesions of the nose for microscopical study. The ulcers were unquestionably tubercular. Besides the usual appearances of a granulation tissue containing large epithelioid and giant cells, much cheesy degeneration was found, offering a marked contrast in this respect to the ordinary lupus. Examination by Ehrlich's method revealed the tubercle bacillus in abundance, a considerable number being found in every section examined.

II. Verrucous Tuberculosis. This includes the so-called anatomical wart, verruca necrogenica. That these anatomical warts, so frequently seen on the hands of persons working in dissecting-rooms and at the autopsy-table, were in reality produced by a local inoculation from tubercular virus, had been considered probable for a number of years, and was asserted by Besnier in 1883. Since then numerous observations, especially by the French, have shown the presence of tubercle bacilli in these lesions. In 1886, Riehl and Paltauf [5] described a form that they named tuberculosis verrucosa cutis, which was similar to the verruca necrogenica. Eleven cases had been observed up to that time, all of which occurred in persons having to do with animals or with animal products. Five of these patients were butchers, two cab-drivers, one wheelwright, one farmer, and two cooks. The affection occurs in patches on the back of the hands and fingers, and in both clinical and histological appearances is similar to the verruca necrogenica. The affection has been very carefully studied by Riehl and Paltauf, to whose article reference should be made for an accurate description. The following case presents so many points in common with this form, that it may, I think, be properly reported here.

I am indebted to Dr. W. F. Whitney for the material for microscopical examination, and to Dr. O. K. Newell, in whose practice the case occurred, for permission to report it. The patient was a carpenter, fifty-two years of age, who had had for about nine years a lesion of the back of the left hand, two centimeters long and one and one-half centimeters wide, situated over the lower end of the fourth and fifth metacarpal bones. It was described as a raised patch, of a bluish-red color, moderately firm, and of a slightly papillomatous appearance. Occasionally pustules would occur over limited areas of the affected region, breaking down into small ulcers. The lesion had been treated with caustics and in other ways, but without permanent effect. Its progress was very slow. No history of any previous affection could be ascertained which would throw light on this manifestation. The patient had been for a number of years, engaged in the carpentering work required for the shipment of cattle by transatlantic steamships, and was often employed in repairing quarters that had been occupied by cattle during transportation, although it is by no means certain that the lesion had not made its appearance before this period. The lesion was excised by Dr. Newell in 1885, the wound healed rapidly, and inquiry a short time since revealed the fact that there had been no recurrence, and that the man was enjoying his usual good health.

The diseased tissue that had been hardened in alcohol presented the appearance of a raised patch, of a more or less papillomatous character. Microscopically, the papillæ were found greatly elongated and covered with layers of horny epidermis, and at the same time there seemed to be a growth of the rete downward into the corium in many places. In the papillæ and upper portion of the corium lay nests of round and epithelioid cells, together with large bodies with nuclei at the periphery, corresponding exactly to the giant cells. In places a cheesy degeneration could be distinguished, although this was never pronounced. Beside this granulation tissue, purely inflammatory foci were present, seldom having reached the stage of suppuration. Sections stained by Ehrlich's method revealed the tubercle bacillus in the nodules of granulation tissue, in far less numbers than in the case of miliary tuberculosis mentioned above, but more numerous than in ordinary lupus.

This case, in its history and pathological appearances, corresponds pretty accurately with the tuberculosis verrucosa cutis of Riehl and Paltauf. In favor of this view may be urged the appearance of the lesion at an age when a first outbreak of lupus belongs to the greatest rarities; its clinical appearances and course; and the result of the microscopic examination, which shows a tissue undeniably tubercular, and which differs from that of lupus in the presence of bacilli in greater numbers, in the more superficial seat of the nodules in the upper layers of the corium, in the presence of cheesy degeneration, and in the appearance of foci of acute inflammation.

A case of this form of tuberculosis was reported last year by Finger, where the patient subsequently died from tuberculosis of the lungs, and Riehl exhibited this year a patient in whom gommes scrophuleuses and signs of internal tuberculosis had developed consecutively to this skin lesion.

As to treatment in these two forms, but little is to be said. In the miliary form, remedies have thus far proved of little avail. The patients are, as a rule, so far advanced in tuberculosis of internal organs that the skin lesion, although progressive and sometimes painful, becomes of secondary importance. For the verrucous form, radical treatment, either with the knife or cautery, is recommended. The usual practice in Vienna, for the last few years, has been thorough curetting, followed by cauterization with the solid stick of caustic potash. Less active agents, as salicylic acid, cause a diminution of the growth.

[5] Vierteljahresschrift f. Derm. und Syph., 1886, I Heft.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., BOSTON.

CONVERGENT STRABISMUS.

LANG and Barrett [1] report the results of the observations and treatment of 102 cases of convergent strabismus who were kept under observation for some considerable periods of time. The method of observation was as follows:

[1] The Royal London Ophthalmic Hospital Reports, Vol. xii, part I.

(1) The distant vision of each eye was tested with and without glasses.

(2) The power of fixation of each eye was tested.

(3) The movements of the eyes were examined, particular attention being given to the extent of the excursion outwards of the squinting eye.

(4) The angle of convergence was measured by a modification of Landolt's methods.

(5) The iris and ciliary muscles were completely paralyzed by atropine, or by homatropine with cocaine.

(6) The angle of convergence was again measured.

(7) The refraction was estimated by retinoscopy and the vision with the correcting glasses determined when practicable.

(8) The full correction was ordered for each eye, the glasses were obtained and worn, and then, and not till then, was the use of mydriatics discontinued.

(9) The patients returned at intervals of three to six months. At these visits they were examined with respect to — (*a*) The angle of convergence whilst the glasses were worn. (*b*) The angle of convergence when the glasses were removed. (*c*) The vision in each eye. (*d*) The presence of binocular or monocular vision as ascertained by the colored letter test.

(10) In those cases in which this treatment did not produce satisfactory results, the internal rectus was divided. The angle of convergence was measured immediately before and after the operation, and at the usual intervals of from three to six months. In no case were the two internal recti divided at the same time, and in a very few was it necessary to divide both. No other operative procedure was ever resorted to.

These 102 cases included no case of convergent strabismus from congenital or other paralysis of the sixth nerve. Their ages varied from four to thirty years, and there were included a few squinting myopic eyes, and eyes with corneal nebulæ. The spectacles ordered were usually large circular ones, the centres being adjusted for distant vision.

IMPROVEMENT BY GLASSES.

The cases under ten years of age were 61, in 53 of whom some improvement was effected and in 8 there was no improvement. The cases over ten years of age were 41, in 34 of whom some improvement was effected and in 7 there was no improvement. Of the cases under ten years of age the improvement was noticeable *only* while the glasses were worn in 15 cases, and in 10 cases over that age the improvement was not present when the glasses were removed. Taking all the cases together the improvement only existed whilst the glasses were worn in 25 cases, or 29.4 per cent., whilst improvement after removal of glasses existed in 60 cases or 70.6 per cent.

Of the 87 cases in which there was improvement, the average original convergence was 23.2° the average amount remaining whilst the glasses were worn 9.1° and the average amount of improvement 14.1°. Of the 60 cases in which there was improvement after removal of glasses, the average convergence was 23.8°, the average amount remaining without glasses 13.5°, and average amount of improvement 10.3°. The glasses were worn usually from six to twenty-four months. As a general rule the longer they were worn the greater was the beneficial result. This remark applies with greater force to those under than to those over ten years of age.

Cases of Cure.— Cases of cure whilst the glasses were worn, under ten years of age, were 27, over ten years of age were 10. Cases of cure when the glasses were removed, under ten years of age were 8, over ten years of age 3. Thus, out of 102 cases, 37 or 36.3 per cent. were cured so long as glasses were worn, and 11 or 10.8 per cent. were permanently cured. In most cases even of cure, monocular vision alone was obtained, when binocular vision was obtained it was usually only whilst the glasses were worn; on their removal it became monocular. Their conclusions are as follows:

(1) The spectacle treatment of convergent strabismus produces a rapid and complete cure in about 10 per cent. of cases.

(2) In a larger number (33 per cent.) the cure continues so long as the glasses are worn. In these cases it would probably become permanent in course of time.

(3) The effect of this treatment is in direct ratio to the youth of the patient.

(4) Spectacle treatment should therefore in the great majority of cases be adopted as an indispensable preliminary adjunct to any operative treatment. By this treatment there is no chance of producing the absolute divergence which occurs sometimes after tenotomy. Exceptional cases occur in which the treatment is inapplicable on account of the occupation of the patients.

(5) If the spectacle treatment fails to produce absolute cure, a division of the internal recti generally suffices, together with the use of glasses, to remedy the deformity. In some few cases the opposite internal rectus must be subsequently divided.

Professor Landolt's [2] method of proceeding in a case of strabismus is as follows: — The nature of the squint paralytic or concomitant, is determined; its degree is ascertained by angular measurement; the field of fixation is mapped out, at least in the plane of deviation; the amplitude of convergence and accommodation, as well as the refraction and the visual acuity are determined. If possible the date at which binocular vision was lost, should be ascertained, and also whether diplopia can still be produced by prisms, the deviating eye should be placed in as favorable a condition as possible by correction of the ametropia, the use of a colored glass before the other eye, etc. If the patient be young, every means at command which may diminish the squint should be used before proceeding to operate. In *convergent* strabismus, all work requiring accommodation for a near point should be stopped, the eyes atrophinized, the total amount of hypermetropia corrected, and, if possible, stereoscopic exercise regularly practiced.

Our means of remedying *divergent* strabismus without operation are less efficacious. Nevertheless, if the condition be due to general or local muscular weakness, tonic and gymnastic treatment may render good service. Professor Landolt continues: I never operate for strabismus until I am convinced that I have obtained all possible help from these methods of "pacific" treatment; and having done so, and having by their use reduced the degree of deviation, the operation most suitable to the remaining squint must be performed. Our operative procedures, no matter how skilfully we perform them, are so clumsy in compari-

[2] Archives d' Ophthalmologie, Sept.-Oct., 1887. Ophthalmic Review, Jan., 1888.

son with the delicacy of the functions of the ocular muscles, that if we trust to them alone we shall certainly meet with failure.

Simple tenotomy will not correct a *convergent* strabismus of 20°; and in such an instance there is a choice of two methods of treatment: (1) division of both internal recti; (2) division of the internal and advancement of the external rectus of the same eye. Landolt advises recourse to the former method if the squint be alternating, to the latter if it be constant. If, a few days after the operation some divergence be present, atropine should be relinquished and the patient allowed to use the eyes. The natural tendency to converge will then aid in restraining the outward deviation. When, in spite of this, the eye still deviates, a slight advancement of the tenotomized muscle is preferable to division of the tendon which has been readjusted. *Divergent* strabismus is much less easily dealt with, and more care should be taken not to produce an over-correction by operative means. Before deciding on the mode of treatment, not only must the degree of deviation be ascertained, but also the power of the abductor and adductor muscles. Examination of the field of fixation will often reveal a considerable limitation of the inward movement, and this not alone in the squinting eye. If the divergence be of low degree, for example, 10°, and the field of fixation reach at least 47° inward, a single tenotomy may suffice; if not, tenotomy of the external rectus of the second eye should be performed. In cases in which the divergence is of long standing and high degree, and the field of fixation is greatly limited inwards, tenotomy of the external, with advancement of the internal rectus is urgently called for; and it may be necessary, in order to complete the cure, to perform a similar operation on the second eye. Before having recourse to this second operation, the means at our disposal to increase or induce convergence should be tried. No atropine should be used; only the eye operated on should be bandaged if tenotomy have to be performed, and both eyes (when advancement of the muscle has been done) only for two days. The uncovered eye will then, during its movements, have the effect of inducing similar action in the muscles of its fellow.

THE RETURN TO THE FLAP OPERATION.

Schweigger,[3] in an article under the above caption after a review of the origin and history of Von Graefe's linear peripheric extraction with iridectomy, says: The tendency from the beginning was to make a larger incision. This was only possible by a return to the flap operation, and so sailing under false colors of linear incision, a gradually growing flap was used. Having been obliged by force of circumstances to return to the flap incision, the next question was whether the small knife was suitable for it. It was excellent where a small flap was needed, with a small anterior chamber, as in many cases of iridectomy for glaucoma, etc. If, however, it was necessary to make the flap larger than the width of the knife the incision could only be finished by a sawing movement. The most appropriate instrument, as demonstrated by G. A. Richter over one hundred years ago, is one where the mere passing forward of the knife finishes the incision, with the exception of a small bridge of tissue which is divided when the knife is withdrawn. The incision is no larger than that made with the small knife. It may, indeed, be made any size desired, while the advantage of a regular clean cut favoring cicatrization and the preservation of the curvature of the cornea quite is evident. For this reason he gave up the use of the small knife for cataract operations about a year ago, and commenced using a knife which was 5 mm. wide at a distance of 30 mm. from the point. He soon, however, recognized the advantages of the old cataract knife, and used first one 6 mm., and finally one 7 mm. Since then he has done all extractions of cataract senilis with the triangular knife, with a flap about 4 mm. high, gradually omitting iridectomy, at first in well-chosen cases, and later more often. With a flap 4 to 4.5 mm. high there was not the slightest difficulty with the iris. If a few pigmented points are brought away with the cataract it is not of much consequence.

Then the important question arose as to whether the danger of prolapsus iridis in the classical operation was really so black as it was painted, and the more he studied this point the more it seemed to him that its dangers had been exaggerated. In sixty cases of extraction, as described above, five only resulted in prolapse of the iris. Too large an incision is one of the causes to be avoided. It is desirable to have a clean cut; not too peripheral, but in the transparent cornea, on the anterior edge of the limbus. Conjunctival flaps may be omitted without disadvantage. With the escape of the lens there is almost always some prolapse of the iris, but it can easily be stroked back with a curette. Should, however, the iris be pushed into the wound by the pressure of the vitreous body, it is much better to do iridectomy at once. In sixty-two cases without iridectomy, prolapse of the vitreous happened but twice. Prolapse of the iris is not necessarily caused by this, for the vitreous body presses it backwards, especially if the hyaloidea does not tear directly behind the incision. Eserine should be dropped into the eye directly after the operation, and at the first change of the bandage perhaps. If used too long it favors iritis. The main point of the after-treatment is that any opening of the lid should be avoided. Eserine, atropine, etc., may be used without opening the eye. A contracted pupil it desirable for the first two days; after this mydriatics are necessary, as more than fifty per cent. of all cases heal with posterior senechia. If the first three days are safely passed over, there is no danger of prolapsus iridis, unless some unforeseen accident should take place. It is a remarkable fact that the forms of incomplete opacity of the lens, in which extraction is permissible at all, give just as good results if the extraction is done without as with iridectomy. The flap operation without iridectomy will regain its proper position, and for this we have to thank solely the introduction of cocaine.

Knapp[4] in an article upon the extraction of cataract without iridectomy emphasizes the following points. It is of importance that the flap be of sufficient size: for a hard, ripe cataract fully two-fifths of the corneal edge of the limbus conjunctival. A conjunctival flap is somewhat in the way during the operation, but it acts favorably upon the closure of the wound, and is a protection from secondary infection. The peripheric location of the corneal section does not in itself favor the occurrence of prolapse of the iris. The mode of expelling the lens differs from that used in the combined extraction. The pressure should be made

[3] Archives of Ophthalmology, Vol. xvi, No. 4.

[4] Archives of Ophthalmology, Vol. xvii, No. 1.

through the cornea on the lower portion of the lens directly towards the centre of the globe. In this way the flap rises, tilts forward, and the lens passes through the pupil with the least bruising of the iris. The removal of the cortex is done in the first place, by following up the escaping cataract with the spoon, continuing the pressure, so that, if possible, the whole cortex may come forth with the lens. The moment the lens is out, the speculum should be removed, and in case any remnants lag behind, they should be wiped out with the edge of the lower lid, care being taken that neither the edge of the upper lid or any other organic part, be passed through the wound. These pressing movements with the lower lid can be done boldly and without injury, are very efficient, and when they fail other means are not likely to succeed. During the operation the eye should be irrigated frequently with Panas' solution. In this series of one hundred cases operated upon in this manner, prolapse of vitreous occurred five times. In four of them the iris was pressed back. All got well without incarceration, and obtained good vision. Prolapse of the iris occurred in twelve cases; in four the prolapse disappeared spontaneously in the course of some months. In four others it was removed with scissors. In one, produced by a hurt, it was reduced two hours after its occurrence. No reaction followed and the pupil was clear and central. In two cases the prolapse remained. In eight cases the iris did not protrude but was more or less extensively united to the scar. Twenty times the presence of iritis or posterior senechiæ is noted. Cyclitis has not occurred at all. After secondary operations in necessary cases the results were 96 per cent. good, 3 per cent. moderate, 1 per cent. failure.

A NEW METHOD OF CORNEAL TRANSPLANTATION.

Von Hippel[5] in an article with the above title reviewing at length the history of corneal transplantation, concludes that the subsequent opacity of the transplanted portion of the cornea is due to the fact discovered by Leber that the transparency of the cornea depends upon the integrity of the epithelium lining Descemet's membrane, as the edges of that membrane after a transplantation are always found to have curled back from the cut edge and thus allow the entrance of the aqueous, and from this cause the graft swells and so becomes opaque.

The essential factor of our author's new method is that in trephining the leucomatous cornea he does not perforate but leaves Descemet's membrane intact, and upon this plants his graft.

In his first cases, which were failures, he attributes the cause to the fact that the graft taken from the cornea of a dog was cut in the same manner as the original piece removed from the leucomatous cornea and the difficulties of removal of the piece injured his graft. In his subsequent and successful operation, he chose a rabbit to take the graft from and trephined the whole thickness of the cornea and planted this on Descemet's membrane as before. In his successful case the vision was improved from counting fingers at two metres to $\frac{20}{200}$. His methods of operation are as follows:

(1) The lids being opened by an elevator he sets the trephine vertically upon the cornea and fixes the globe by two pairs of forceps. One to the inner and one to the outer side of the globe. Although cocaine is used for the anæsthetic there is always more or less bleeding from the cut in the leucoma.

(2) The removal of the trephined portion of the cornea is the most difficult portion of the operation, and is done in the following manner. The trephined portion is seized with a pair of strong, straight, iris forceps with sharp teeth, and dissected off with a Graefe cataract knife. The aim being to remove a piece of equal thickness and to leave the cut margins vertical. This step of the operation is much complicated by the hæmorrhage, and when done, a solution of bichloride is instilled, and the lid closed with gentle pressure to arrest the bleeding.

(3) With the same trephine a portion of the cornea of a rabbit, anæsthetized by cocaine is removed. A young rabbit is preferable on account of the thinness of the cornea. The fixation of the eye of the rabbit is a somewhat difficult operation and is best done by inserting a strabismus hook behind the eye around the nerve and drawing the eye as far out of the orbit as possible so as to press firmly against the lids.

(4) The graft is then laid upon the cornea near to the defect caused by the trephine and then slid with a spatula into the area of the wound. The transplanted portion must not project above the surrounding tissue or it is liable to be dislodged. As soon as the graft is in the proper position the whole cornea is dusted with a thin layer of iodoform, the lids closed, a bandage applied over both eyes, which is allowed to remain undisturbed for two or three days, and on the eighth or tenth day the eyes can be left opened, if all injection has disappeared.

Von Hippel's conclusions are as follows:

(1) The possibility of corneal transplantation by my method with the permanent transparency of the flap with a material improvement of the vision is undoubtedly demonstrated.

(2) Even in the case of leucomata which extend through whole thickness of cornea.

(3) It is impracticable in adherent and bulging leucomata.

(4) The operation is without danger and with very little pain to the patient, and so can be undertaken in all cases in which there is the least probability of a good result.

[5] Archiv. für Ophthal., Band xxxiv, Abtheilung 1.

Reports of Societies.

SUFFOLK DISTRICT MEDICAL SOCIETY. SURGICAL SECTION.

G. H. MONKS, M.D., SECRETARY.

Meeting Wednesday evening, May 8th, the Chairman, Dr. J. Collins Warren, presiding.

On motion of the Secretary, it was *voted* that a Committee of two be appointed by the Chair, who should assist the Secretary in selecting subjects for the meetings of next year, and in securing the services of those members who, in their judgment, should be best suited for the presentation of such subjects.

Dr. E. H. Bradford read a paper on

TWO CASES OF DIRECT INCISION INTO THE HIP-JOINT, WITH OBSERVATIONS AS TO "DISTRACTION" IN HIP DISEASE.[1]

Dr. W. M. Conant said: At the request of

[1] See page 147 of the Journal.

Dr. Bradford, I have brought before the Section a number of ligamentous preparations of the hip-joint, and will demonstrate them with special reference to the function of the cotyloid ligament as a means of holding the head of the femur in the acetabulum. It is hardly necessary to mention the ligaments of the hip, yet it may recall some forgotten points if I do so. The ligament teres connects the head of the femur to the acetabulum.

The cotyloid ligament surrounds the rim of the acetabulum and deepens it. Below the notch there is the transverse ligament, and over this the cotyloid extends, so that there is a complete circle of cotyloid ligament. This specimen shows that the outer edge of cotyloid extends beyond the head of the femur, so that its outer margin grips the constricted portion of the femur just below the head, when it is pushed into the bottom of the acetabulum. Then there is the capsular ligament, which surrounds the joint, and this is strengthened in front by the ileo-femoral or Y ligament. This ligament extends from the inferior anterior spine of the ilium to the anterior trochanteric line, and is put on the stretch when the body is in the erect position. This ligament is very strong, and serves as a check to hold the femur in position when the body is erect.

It will be noticed that the head of the femur is not a perfect circle, and that the longest diameter is from superior portion of the head to the inferior portion at the neck. This makes evident the fact that in certain positions the longest diameter of the head might impinge upon the cotyloid ligament, so that the amount of distraction on separation of the head would be very slight.

This specimen shows that with the femur extended the longest diameter of the head impinges on the cotyloid. It may be said that the Y ligament holds the head because it is on the stretch; if, however, this is cut, there is still very little distraction. But if you flex the femur, the shorter diameter of the head now impinges on the cotyloid, and on pulling there is more distraction. If, now, I abduct the femur, as well as flex, you have the shortest possible diameter against the cotyloid, and on using force it is possible to get very considerable distraction.

If you pull down with the femur in the line of the body you get almost no distraction, but as soon as you flex and abduct the head of the femur comes out with very little difficulty, and can as easily be put back into the acetabulum.

DR. CHEEVER: The difficulty of draining the hip-socket, I should think, would be very great. In former times I frequently excised the diseased head of the bone, and even then was so struck with the difficulty of draining and washing out the cavity, that I adopted the practice of cutting a large triangular flap of skin and muscles, and sewing it or pinning it back, thereby converting the cavity of the acetabulum into an open crater or saucer, which could not close up. The depth of the parts, the thickness of the fasciæ, and the contractions of the muscles, I should think, would render drainage into the hip, which was incised by any ordinary incision, almost impossible. I had an idea that the benefit derived from extension was not so entirely by drawing the diseased surfaces apart, but was also by holding the muscles absolutely still, so that, being tired out, they did not give spasmodic contractions on the slightest nervous provocations. However it may be, the fact remains that in the majority of cases of hip disease, unless acute abscess is forming, extension almost always gives relief.

DR. WHITMAN: I understand, then, that Dr. Bradford recommends extension with abduction in these cases, considering the fact that the leg can be more easily extended when abducted.

DR. BRADFORD: Yes, in certain cases. In adults it is evident that extension in the line of the body does not cause distraction; that is, separation of the bones. In children, of course, that is not as true, because the cotyloid ligament is not so firm and the acetabulum not so large as in adults. In all probability it is not necessary to abduct the leg, but in extreme cases, such as I referred to to-night, I should say that extension in the line of flexion and abduction would give better distraction than the ordinary way.

DR. BRADFORD: In regard to the drainage of the hip-joint, I think that Dr. Cheever is certainly right that it would be practically impossible to drain the hip-joint thoroughly by a simple incision. In the case that I reported, the second case, I did not expect to entirely drain the joint. What I did expect, however, was to cut down upon the joint that was distended by pus, and allow the escape of that pus by incising the resisting wall of the capsule. I accomplished it in a measure, but I don't think I accomplished it as thoroughly as it could have been done, and I did not find the joint as distended as I expected to. There was not more than half an ounce of pus in the joint. I think that Dr. Cheever has expressed the object of extension exactly: that it is not only to cause distraction, but also to counteract the spasm of the muscles. I laid stress upon the subject of distraction because it is a matter which is to a certain extent under discussion, and it seemed to me important to show that distraction could be carried out.

DR. J. W. ELLIOT showed Bozeman's apparatus for

DRAINAGE OF THE BLADDER THROUGH THE VAGINA,

and explained its construction and action.

DR. A. K. STONE reported

FIVE CASES OF PERINEAL SECTION WITH EXCEPTIONAL COMPLICATIONS[2]

occurring in the practice of Dr. C. B. Porter.

DR. PORTER said: It is not my custom to report my cases at a medical meeting by proxy, but these cases had been carefully prepared for publication in the JOURNAL by Dr. Stone, and at the request of the Secretary of the Section he consented to read them here to-night. The case of curetting the bladder interested me very much on account of the peculiar condition of the mucous membrane, which felt like exuberant granulations, covering the whole surface, the bladder being firmly contracted, and I said at the time of examination: "If this were anything else, I would curette it." And then I thought at once: "Why should I not do it, under the circumstances?" By a pressure above the pubes the whole bladder was readily brought into relation with the curette, and its whole internal surface was cleaned just as an epithelial ulcer on the face would be scraped. The after-progress of the case certainly proved that the treatment used was the best thing that could have been done. From passing urine every fifteen minutes,

[2] See page 148 of the Journal.

and from its being nasty and bloody, it very soon came away clean, and the patient went from the hospital holding the urine very much better, and rising but once or twice in the night.

The case that proved to be tuberculosis was exceedingly interesting to me, because it was a complication which I did not expect. The man was in a pasty, waxy condition, but I did not think that he looked worse than a great many cases that present themselves with stricture, with an abscess in the perineum or perineal fistula, and I think that it was not so much the stricture produced by gonorrhœa which caused the obstruction, as it was the swelling of the parts about the urethra, and the involvement of the urethra by the deeper deposit. I did not suspect the tuberculosis until I saw the cheesy deposit as it appeared under the knife.

The case, where there was a traumatic rupture of the urethra, was interesting to me from the fact that the man had very little hæmorrhage, if any, from the urethra, until the eighteenth day. And that was after he had been free from his catheter for a number of days, and sounds were passed merely to insure the patency of the urethra, in order that he might be discharged, he being practically well, and there being no swelling and no soreness. The ecchymosis had almost entirely disappeared. Then, supervening on that was this very sudden hæmorrhage, so that while I was making the visit in the morning, being absent from the room perhaps half an hour, the patient bled a pint and a half from the urethra; and that without any previous manipulation, with the exception of a catheter in the urethra. Then on cutting down and turning out the clot, it was surprising to find that there were three separate spurting vessels in the tissue which had not been cut with the knife. They had probably been plugged, and for some reason had been opened afresh, and given rise to this very marked hæmorrhage.

I think the case in which the penis was so enormously swollen, interesting from that fact, and also from the fact that so much skin from the penis was lost. The patient certainly did remarkably well.

DR. F. S. WATSON: The first case seems to me a very valuable contribution to bladder surgery. It is, so far as I know, a unique case, as Dr. Stone has pointed out, and illustrates the advantages of a keen surgical intuition. The only case that I can recollect, in which recourse was had to the same procedures, is one which Guyon publishes. That was in a case of tuberculosis, the disease being limited to the bladder, in which the bladder was curetted and touched with the Pacquelin cautery. That patient recovered from the tuberculosis, the bacilli disappearing after that had been done. He did it in a second case, in which the bacilli disappeared, but the patient continued to have cystitis. So far as I know, these are the only two cases in which this procedure has been done.

The second case, of tuberculosis, was interesting to me more especially in regard to one point which I have had my attention called to lately, and which I expressed Saturday night in reporting a case of tuberculosis. Two years ago that patient came to me with small swellings in both epididymes. These preceded the appearance of urinary symptoms by a short time. The question came up again a few days ago, in a case where there was a chronic swelling of the testicle without suppuration or urinary symptoms, as to the desirability of removing the testes in such cases. It seems to me a very important one. Certainly I never watched such suffering as that which the first patient underwent after developing tuberculous disease of the bladder and kidneys which had its origin in the cheesy masses in the epididymis. If anything could be done to relieve these cases I think it would be of the greatest possible importance. In my opinion these chronically inflamed testes should be removed as soon as possible. I would also like to call attention to the inefficacy of divulsion in the fourth or fifth case, and point out the fact that it would seem to have been a case well suited to the cutting operation with the Maisonneuve, using the small knife first, and later the larger one of Otis. It is in these cases that this operation is most appropriate and efficient.

DR. CHEEVER: I would not be willing to let so interesting a series of cases pass without adding a little to it from my own experience. In the first place, in regard to the permanent opening. My experience is very small; I have seen but one case. I did the operation upon a brother physician at his own request. He had been a patient of the late Dr. Curtis. He suffered very much from irritability of the bladder, and desired an outlet to be made. The operation was done but afforded no permanent relief, although the opening was not allowed to close for a good while. With regard to the tuberculosis, I believe that I have a case at the present moment, in which an indolent abscess has formed between the perineum and bulb, and side of the sacrum. At first it was thought to be a fistula, but later it was found to be not urinary, but a sinus, discharging small cheesy masses which came from the deep tissues about the nates and perineum. The patient was a young man of very feeble habit, and of a strongly tuberculous family.

In regard to operations for extravasations, I would like to say that I can recall no case which has failed to do well where I made a direct opening so as to give exit to the extravasated urine through the perineum except in a few cases where it was afterward found as shown at the autopsy, that disease of the kidney existed. I think that every one will agree that these cases are very appalling and threatening; that they often occur in very dissipated individuals; and frequently in consequence of a debauch or something of that sort, and the extravasation is very large and very destructive, and the patient appears to be reduced by them to a low ebb; that the relief by the direct outlet through the perineum is immediate and very great, and almost all cases recover unless there proves to have been some disease of the kidney. In that case I think cases almost all die.

The only other point is in regard to the fifth case. I have had in the course of a number of years two cases of great destruction of the penis. One case was rather unusual, in which the patient got drunk and lay out in the snow, with his genitals exposed. Frostbite of the genitals must be very rare, of course. In this case the penis froze, and subsequently sloughed, with great loss of tissue. In the other case the patient was about some machinery and incautiously straddled over a revolving arm, which caught his trousers and rolled him up rapidly, caught the scrotum, and stripped off pretty much all the skin from the penis. Both these cases survived. Both were patched up in various ways by plastic operations, and had resulting organs through which they could pass water, etc., pretty well. In both of them there were these

painful erections, which I first looked at as evils, but which on more mature consideration I came to regard as really beneficial to the individual, in spite of the suffering, for if they had not occurred the subsequent contractions would have been very much greater. They kept the organ more or less distended through a certain part of the twenty-four hours, and in spite of the patient's sufferings, I have no doubt they were beneficial in the subsequent history of the case, for the parts, especially about the urethra, were not bound down by adhesion.

DR. PORTER: I would like to make one more suggestion. It is a question, in the light of what Dr. Cheever has just said, whether some of these cases in which a free opening through the perineum has been made for cystitis — those cases that do not recover — would not be benefited by curetting the bladder. Whether it is not due to the fact that the mucous membrane is in such a flabby granulating condition that there is no chance for recovery. I only throw out the suggestion as a question to be considered in these operations, in reference to making a much more careful exploration of the bladder with the finger to determine that, in cases that may present themselves hereafter.

DR. J. C. WARREN: In the after-treatment of cases of perineal section, I have of late been in the habit of introducing the catheter through the perineum, and not through the penis. I was led to that custom by an experience of mine in one case, where the catheter had been retained for a couple of days, the wound was healing nicely in the perineum, and had covered over the catheter, when a gush of urine took place outside the catheter, and an extensive extravasation into the scrotum was the result, with sloughing of the scrotum. It always seems to me, best therefore, to drain the bladder just as you would drain an abscess cavity with a drainage-tube, until a period has arrived when such a disaster as that spoken of would have been impossible; that is, when a fistulous opening had been made through the perineum, surrounded by granulations. After that, this fistulous opening might be allowed to contract, just as the fistulous opening in the trachea would close in after the removal of the canula, and the urethra can be kept open by sounds. That is a very convenient way of draining the bladder, also, because the English rubber catheter can be kept between the patient's legs, and can emerge through an antiseptic dressing. I have had no bad results from that mode of treatment.

DR. M. H. RICHARDSON reported a

CASE OF SUPRA-PUBIC CYSTOTOMY FOR TUMOR IN THE BLADDER.

and DR. F. S. WATSON followed with a

CASE OF PEDUNCULATED PAPILLOMA OF THE BLADDER, SUCCESSFULLY REMOVED BY PERINEAL OPERATION;[3]

and showed

A NEW FORM OF PERINEAL DRAINAGE-TUBE.

DR. RICHARDSON: Of course it is impossible to come to any conclusion in one case, but I have felt ever since this operation that if we had done the perineal operation this patient would perhaps have gotten well. In going over the operation in my mind since, there is nothing that I would have done differently in doing it a second time, unless it were the providing for drainage through the outer wound. The bladder was sewn up, leaving a small opening, then the wound was sewn together in the upper part, leaving sufficient space, as it seemed, for the drainage of the bladder, so that, in case of extravasation of urine outside the tube, which I don't see how you can prevent, it would not be forced down in the cellular tissue outside the bladder. I have not in mind the statistics of recovery after cystotomy, but my impression is that they are very favorable indeed; that some men have done a very large number of supra-pubic operations for stone without a death. Dr. Watson has put it exactly as it seems to me. The operation to be selected would vary according to the position of the tumor. If it is easily in reach of the finger, then the perineal operation would be sufficient. I do not see any way in which you are going to avoid the risk of extravasation of urine into the cellular tissue around the bladder.

DR. WATSON: The way in which the Frenchmen overcome that difficulty, and they have been very successful in doing so, is in the enjoyment of a double drainage-tube. The wounds are left opened, then whatever urine is extravasated beside the tube is not forced into the tissues under pressure, but runs out over the wound without harm resulting. Guyon's cases show that very decidedly. The Germans almost always sew up the bladder wound, on the contrary.

I was very much impressed with the fact when last summer I did supra-pubic cystotomy for tumor of the bladder, that it was not good surgery to sew the bladder wound tight where there was much bleeding in the bladder unless there is a very large opening in the perineum, for the pain from tenesmus was very severe and the strain on the suture was great. I do not think that any stitches would have stood the strain.

DR. ABNER POST showed a

CALCULUS FORMED ABOUT A PIECE OF CATHETER.

DR. MIXTER showed a

MODIFIED UTERINE ECRASEUR

of his own invention, and Dr. C. B. Porter, who had used the instrument in a case of hysterectomy, spoke highly in its favor.

[3] See page 145 of the Journal.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

STATED MEETING, June 12, 1888, C. B. NANCREDE, M.D., in the chair.

DR. JOHN S. MILLER read the following paper:

A CONTRIBUTION TO THE STUDY OF BONE REPAIR.

The recent observations of Macewen[1] have done much to stimulate the study of bone repair, and have thrown not a little light upon the function of the medullary cells in osteogenesis.

The resort to mechanical irritation of the medullary tissues as a means of accelerating bone repair, is an old procedure. Nancrede[2] claims a priority in this for America. As far back as 1793 Eve[3] relates that the lay surgeons of the frontier were wont to make multiple perforation of the external table of the skull where

[1] Annals of Surgery, vol. vi, p. 289 et seq., 389 et seq.
[2] Internat. Encycl. of Surg., by Ashhurst, vol. v, p. 8.
[3] Remarkable Cases of Surgery, p. 35. Philadelphia, 1857.

necrosis had followed the Indian mutilation of scalping. And twenty years ago Agnew [2] resorted to the same procedure in a case of injury to the head. A fatal termination of the case, however, by encephalic complication, rendered the experiment incomplete. Reports of success by this procedure have been recently multiplied to an extent which will excuse us from repeating them in detail.

That, furthermore, medullary proliferation is not only an element in osteogenesis, but is of itself sufficient to that end without peritoneal coöperation, is evidenced by the case of Macewen,[4] in which a considerable restoration of the humerus was secured "by bone-transplantation," after a suppurative inflammation had destroyed both the shaft and its periosteum. The date of this observation is 1878.

Whether the introduction of proliferating medullary cells into ordinary connective tissue granulations may convert the whole into osseous tissue, or that a few osteoblasts will, so to speak, leaven the whole mass, is a question involving grave doubt, but the affirmative would seem to receive some support from the case which Nancrede [5] relates in 1883. An extensive laceration had caused denudation and necrosis of the ulna in two-thirds of its extent. The process of repair had been delayed, he drilled numerous holes through the sequestrum into the medullary canal, and, to quote his own words, "in a few days granulations sprang up from the ulna and fused with the granulations of the soft parts, and, in course of time, the fragment was separated."

That the procedure in this case had the effect of stimulating osteogenesis from within, we can readily believe; but concerning the fusion with granulation tissues without, a more accurate observation than is recorded by Nancrede is desired. Although by analogy we might conceive it possible, inasmuch as repair within the bone is by ossification of an embryonic tissue derived from the connective tissue around the bloodvessels of the medullary spaces. A similar case is reported by Macewen,[6] in which granulations appeared upon a surface of bone completely denuded of its periosteum, and gradually spread until they became united with the granulation tissue at the periphery of the wound. Macewen, however, infers from this observation that:

"The periosteum covering a bone may be completely destroyed or permanently removed, yet the denuded bone may not only retain its vitality, but may throw out cells which will cover it and form a new periosteum."

These cases would seem to confirm Macewen's dictum that the periosteum has no part whatever in the regeneration of bone. But the first case I shall present to your notice this evening demands a different hypothesis for its explanation.

The patient, D. M., aged fourteen years, suffered from an osteomyelitis of the right tibia, resulting in total necrosis of its diaphysis. A complete involucrum had formed around the sequestrum and afforded an unsteady support to the body weight. It was covered with the thickened periosteum. A number of fragments had been removed from time to time, and the parents had refused to entertain for him the proposal of amputation. The case, however, when it came into my hands, had become from septic infection so desperate that I was compelled to do something radical at once.

Exposing the shaft, or rather the involucrum, through its whole length, I made with trephine and saw a fenestrum large enough to permit the removal of the remaining sequestra, and cleared out the whole canal. Both epiphyses were found carious upon their exposed surfaces, and were scraped to the limit of safety. In a few days a superficial necrosis took place upon the inner surface of the tube.

Demarcation was, however, promptly effected by the free use of aluminum acetate [7]— that sheet-anchor in all sloughing wounds — and a fine layer of minute granulations became the field for any osteogenesis which we might hope to witness. During the long process of repair with the carious epiphysis as a never-failing source of bacterial supply, it was no trifling task to keep this extensive opening dry and sterilized. Furthermore, neither the patient, the household, nor the neighborhood could endure frequent dressings without great nervous prostration.

The requirements of the case were successfully met by a mixture of iodoform and starch, in proportions which varied with the changing conditions. The cavity of the wound was filled with this dry powder, and to the whole was applied a closed dressing of gutta-percha tissue. The purpose of the starch was to absorb the excess of moisture incident to a closed dressing as well as to dilute the iodoform. As soon as the powder became saturated it was removed by a stream of sterilized water, and the wound was filled and closed as before. The periods of dressing were gradually increased from three to ten days. I mention these details, because without them, or similar ones, we can wait in vain for the desired repair. In process of time the hollow of the involucrum became completely filled with granulation tissue, which continued to extend until it fused with the granulations from the soft parts, and finally the whole became covered with a new epithelium which had gradually spread from the edges of the wound. The tissues became now denser, and offered more and more support to the body weight until, as you see, he has acquired a very useful limb, and can walk without discomfort.

We must, therefore, infer that a metamorphosis into bone has taken place, and as the original diaphysis was gone with its medullary structure, we can find no osteogenic agent in the result other than the periosteum.

We must draw a similar conclusion from the recent case reported by Ceci:

The patient, a young man, developed an acute osteomyelitis of the left scapula five days after circumcision for inflamed phimosis. One month later, Ceci [8] extirpated the bone, making the usual L-flap. The periosteum was left intact as far as possible, and the arm was preserved. The patient recovered rapidly, and there was a subsequent regeneration of the bone.

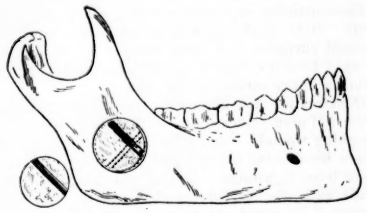
The only possible explanation of this result is by the hypothesis of periosteal agency or coöperation.

The second case which I present is in confirmation of Macewen's proposition that, "a portion of bone which has its continuity severed on all sides, and has had all its periosteum removed, is capable of living and growing.

[4] Loc cit., p. 301.
[5] Transactions of the Philadelphia Academy of Surgery, 1888.
[6] Loc cit., p. 293.

[7] ℞.—Pot. et alum. sulph., 1 part: plumb. subacet., 5 parts; aquæ bull., 100 parts. M. Filtra.
[8] Centralbl. f. Chirurgie, Dec. 17, 1887.

This is in contradiction to our inference in the case of the tibia, and can be reconciled only by the assumption that the discovered laws of osteogenesis are of a lower order, subject to some general law of which we are as yet ignorant. But to the case:



Mrs. L., aged forty-seven years, had suffered with a neuralgia of the maxillaris inferior, for the relief of which all medical means had been exhausted in vain, and which, therefore, left to my option only the *dernier ressort* of neurectomy. The mode of operating was the usual one. The ramus was trephined near the angle of the jaw, the canal was exposed, and about two inches of the nerve trunk were drawn out and exsected. The button was, however, returned after having been sterilized in a 1 to 1,000 solution of corrosive sublimate, but it was not returned to its old position. With a view of imposing a barrier to the reproduction of the nerve, it was so rotated around its vertical axis that the groove upon its lower surface stood at right angles to the axis of the canal. Not only did the wound close by first intention, but the button grew solidly in its position. Now, the curious thing in the case is, that before trephining I had carefully removed the periosteum, so that the latter can claim no part in the subsequent bone-repair. After seven months there has been no return of the disease.

DISCUSSION.

DR. JOHN B. ROBERTS: It is a curious fact that the medical mind has not appreciated the possibility of bone-production, despite the frequent instances that must always have come under notice. I was taught in cases of comminuted fracture to take out the spicules of bone that were entirely separated from the larger fragments, lest they should necrose and give rise to trouble. Now it is the practice of the best surgeons to leave the spicules, and we find that often they do not die, and that they assist in the process of union and solidification. This experience is in the same line as the facts given by Dr. Miller in connection with his interesting cases. If these spicules of bone can reunite, why not the button removed by trephining? Why is it not good practice to insert, when necessary, a portion of dog bone or chicken bone, as, indeed, has been done? We must not forget, however, the importance of asepsis, and that it is antiseptic surgery that has made these procedures possible.

In a case which Dr. Miller reports to-night, where he rotated the button of bone, turning the groove in which the inferior dental nerve had run at right angles to its former direction, I should be inclined to go still further and turn it upside down. The bottom of the pit in which it is to be placed, and the periosteal surface of the button being scraped, the ungrooved, freshened surface, formerly external, would then be placed inward, and a bony plug would be interposed between the divided ends of the nerve, probably preventing the reunion and return of pain which so often occur.

The case of tibial resection has been very interesting to me, as I have recently operated upon a similar one; the patient being, however, a woman of about fifty years, so that I cannot hope for as complete a closure of the cavity in the bone as in this growing child, exhibited by Dr. Miller. In that case I removed the whole front of the tibia, going as near the articular cartilages above and below as I dared. The process of repair is like that we see in a tree. We know that if a foreign body is inserted into a wound made in the trunk of a young tree the process of cell-growth will go on about it, and finally it will be completely covered in, and its presence be unsuspected, until, perhaps, the saw strikes it, as the tree is being converted into lumber.

Dr. Keen, in his recent case of trephining for brain tumor, returned the button of a skull removed, and the patient was able in a few days to walk around with a perfectly healed and reunited cranium. Then we know what the dentists do in the way of transplantation of teeth, or return of teeth to their original sockets after removal of diseased portions. More remarkable still is the implanting of old, dried teeth into new sockets, bored in jaws from which even the alveolar process had disappeared, and becoming fixed there.

DR. GEORGE E. STUBBS: In reflecting upon these cases and similar ones, it occurs to me that perhaps in the numerous resections we have done in army and in civil practice, we have made mistakes. Surgery has advanced immensely since the war-time, and antiseptic surgery has opened new possibilities. Often, in my army practice, we removed all the bone when there had been a comminution. I should now, with our new light, try to save more of the broken bone, and so shorten the period of recovery.

In regard to operative treatment of neuralgia, I believe that we are entering upon a stage of work that will be much enlarged in the near future. I had a case recently in which neuralgia of the interior dental nerve had existed for nearly seven years. I removed one and three-fourths inches of bone with the dental engine, took out as much of the nerve as I had access to, and dressed and treated the wound antiseptically. The wound healed by first intention, and as yet there has been no return of pain, so that I consider I have obtained a very good result.

The Chairman, DR. NANCREDE: The first question to be answered in a discussion of this kind is: what constitutes the periosteum? If we mean a fibrous membrane, the inner layer of which consists principally of yellow, elastic tissue, then we must agree with Macewen's extreme views, and admit that it has nothing to do with bone-repair. But, if we study the normal process of bone-development, I, at least, must arrive at a different conclusion. The long bones are laid down in cartilage, a temporary structure. How do they ossify? By means of this very periosteum, which Macewen treats with such contempt, and which Ollier exalted too highly. There is a third layer of the periosteum in direct contact with the bone, and this layer is composed entirely of those elements which, wherever we see them, we recognize as the agents of ossification — the osteoblasts. The temporary cartilage is invaded by connective tissue, ingrowths from the periosteum, covered with osteoblasts,

and is eaten up by them; and we find it permeated, and finally replaced by a network of fibrous tissue covered with osteoblasts. A certain number always remain beneath the periosteum. A certain number, very small, remain in the Haversian canals, a still larger number in the medulla.

It is clear to me why compact tissue dies; it has so few osteogenetic cells. The medullary tissue lives because it is comparatively rich in osteogenetic elements. Why does bone die when the periosteum is stripped off? because the resulting inflammation is so severe that the inflammatory tissue strangulated the osteoblasts in the Haversian canals. With antiseptic means we now control the inflammation, and the osteoblasts are not killed and the bone is saved.

We are very hard, nowadays, on the periosteum. The fibrous layer has nothing to do with bone-repair, but its osteoblastic layer is in direct communication through the lining of the Haversian canals with the medulla; it is practically one structure, and thus, if we look at this matter from the standpoint of a correct histology, we find that both views are correct, provided only that we have a distinct understanding what is meant by the word periosteum in each case.

As to Dr. Miller's cases, I cannot quite agree with him as to what formed the bone in the case of total excision of the diaphysis of the tibia. While the shaft was dying, new bone was formed by the deep layer of periosteum, but after that the medullary spaces of the involucrum completed the bone.

I would also take exception to Dr. Roberts's proposition to scrape the button of bone and turn it inside out in the case of trephining the jaw for neuralgia. By this process he would remove all the osteoblastic cells, and the compact tissue would have a very good chance of dying. One reason for failures in operations about the lower jaw is that it contains so little true medullary tissue, while, on the contrary, we can replace trephine buttons in the skull and have union, because the skull contains a large amount of such tissue.

I think Dr. Stubbs need not blame himself for his practice in resecting in military surgery. The necessary condition to bone-repair is that absence of suppuration afforded by antiseptic methods, and under the conditions present in the operation he speaks of he did right. And, to-day, he does right in trying to save the bone. In each case he takes the proper course in relation to the circumstances, and that is all that any one can do.

The case of Dr. Agnew, referred to in the paper, occurred some twenty odd years ago. I saw the operation. The wound was completely covered by granulations. The fact that a denuded external table did not always necrose was known to Potts and to all the older, as well as modern surgeons, and if Ollier had not led us astray by grafting, by insisting upon the periosteum being the sole osteogenetic agent, ignoring the fact that in removing it a layer of cells identical with those of the medulla are torn off, I think we would have arrived at a correct practice sooner. But surgeons went wrong by authority of Ollier, as they are now going wrong in the other direction by authority of Macewen.

In regard to the implantation of dead teeth, which Dr. Roberts refers to, the principle is probably the same as in the bony pegs we used to employ for ununited fractures. They are hollowed out by the granulation tissue which develops into a fibrous or even osseous tissue, and so holds the tooth in place by these newly formed digitations.

About twelve years ago I exhibited to this Society a case in which I resected four and a half inches of the humerus, and about two and a half inches were reproduced from the sawn end. This was without antisepsis. In the case referred to by Dr. Miller, where I drilled the ulna, I am sure that the bone granulations fused with those of the soft parts for these reasons: the shell of bone, when detached, was not more than one-fourth the thickness drilled through, while the new bone was nearly as thick as the ulna of the other side, as the cicatrix was not materially depressed. A recent experience in a case of knee-joint excision induces me to recommend that, instead of wiring fragments of bone, we nail them together, after having previously drilled, or not, according to circumstances, allowing the heads of the nails to project through the skin. We thus save trouble, and avoid damage in the removal.

Dr. Roberts: Dr. Nancrede misunderstood me in regard to scraping away the cancellated tissue in reversing the plug in the case of trephining the lower jaw. I would scrape only what he calls the fibrous periosteum from the button, and from the bottom of the pit in the jaw I would take away the cancellated structure sufficiently to remove all trace of the nerve canal. The two raw surfaces would be placed together, and, by the sinking of the button, would be a solid, bony plug, interposed between the nerve ends.

Dr. Miller: I do not see any advantage in reversing the plug over rotating it. The groove being at right angles to the course of the nerve, the part in contact with the nerve is still solid bone, and the groove does not matter at all. In relation to the tibia case, the reason I emphasize the fact that the repair took place from the periosteum is because there was entire death of the old bone with the involucrum, and the periosteum did not die.

Recent Literature.

Surgery: its Theory and Practice. By William Johnson Walsham, F.R.C.S., etc. 236 illustrations, 655 pages. Philadelphia: P. Blakiston, Son & Co. 1887.

The object of the writer of this little volume has been to furnish a work giving in as concise a manner as possible those facts which give to the student a general insight into the theory and practice of surgery, and which is not intended to take the place of the standard works and exhaustive treatises on this subject. For this purpose it is well written, and presents the subject in a manner which makes the volume a student's useful handbook. It is issued in a convenient form in clear type, is neatly bound, and contains many instructive illustrations. For a practitioner, the style is too concise, and the omission of many important details make it in many instances a mere compendium of fundamental principles and pathological or clinical facts.

— There has recently been presented to the Paris Anthropological Society a "Catalogue of Prehistoric Crania contained in the Broca Museum." It refers to 653 specimens representative of time from the earliest epoch to the Merovingian, inclusive.

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THE TOPOGRAPHY OF THE BRAIN.

IN the *Forum* for August, Professor Charcot, in reply to the article of Brown-Séquard in the April number, states a series of propositions, which he regards as summing up the existing knowledge of cerebral localizations, and gives weighty reasons therefor, based on anatomico-clinical facts.

In the endeavor to ascertain the function of definite portions of the cortex, Charcot sets aside, as of only secondary or subsidiary value, the results of experiments on animals, of which Ferrier has presented such a complete embodiment in his "Functions of the Brain." He emphasizes the differences which exist between the human cerebrum and that of animals. The brain attains in man a degree of development and perfection not reached in any other species. Its functions become complex, while at the same time its morphology undergoes important modifications. Now, as regards localization, morphological details are of the first importance. As for functions, even if we take account only of those common to men and animals, they are not performed in all in the same way. The higher an organism stands in the animal scale, the more strictly are the purely reflex functions subordinated to the functions of the higher centres. A decapitated frog performs with its legs coördinated automatic movements; not so a decapitated dog. In the dog, brain lesions, even of considerable extent, produce only incomplete paralysis, often passing away, while in man the like lesions cause incurable functional troubles. These examples are enough to show how much reserve is necessary in drawing inferences, as regards brain functions, from animals to man. The results of experimentation can give only presumptions more or less strong, but never absolute demonstration. Hence, the only really decisive data touching the cerebral physiology of man are those developed according to the principles of the anatomo-clinical method. This method consists in ever confronting the functional disorders observed during life with the lesions discovered and carefully located after death. This is the method that enabled Laënnec to throw light on the difficult subject of diagnosing pulmonary affections, and it has also materially helped the diagnosis of diseases of the liver, kidney, and spinal cord.

Taking, then, his stand on the rigorously ascertained data of the anatomo-clinical method, Charcot proceeds to formulate certain propositions which he thinks may now be regarded as established:

(1) When a brain lesion, whether cortical or of any other sort, is accompanied by motor paralysis, the seat of the paralysis is always on the side opposite to that of the lesion. This proposition is universally accepted by physicians, and in clinics it may be said to have the force of a law. Granting, Charcot says, that this law is subject to exceptions, these exceptions are so rare that, as far as clinical diagnosis is concerned, we may leave them out of account and hold it for a well-established truth that a paralysis of cerebral origin presupposes a lesion of the hemisphere of the opposite side. If, now, we turn to the study of disorders consequent on lesions of the cortex, we find that hemiplegia is often the consequence of these lesions. But not all lesions of the cortex are accompanied by hemiplegia; they are so only when certain conditions as to the extent of the lesion and its seat are present.

(2) Anatomo-clinical research shows that even considerable alterations in the gray matter of the brain cause no motor disturbance when they are localized in certain regions; for example, the sphenoidal, occipital, and inferior parietal lobes of the *pli courbe* and of the insula, the orbital lobule, and the anterior portion of the first, second, and third frontal convolutions. These portions of the brain may be destroyed by softening, may be compressed or irritated by tumors, by bony splinters, or by effusion of blood, without in the least affecting motility.

(3) The case is totally different if the region destroyed is that corresponding to the two ascending frontal and parietal convolutions and the adjoining *replis*, namely, the paracentral lobule, the foot of the first three frontal convolutions, and of the superior and inferior parietal lobules. In such cases we always find hemiplegia of the side opposite to that of the lesion. It is from such considerations as this that we formulate the existence of a well-defined motor zone in the cortex. This zone occupies pretty nearly the middle portion of the external surface of each hemisphere.

(4) The above conclusion is confirmed by anatomo-clinical observations of another order. It has been clearly proved that among the cerebral lesions *en foyer*, there are some, that is, those of the motor zone, which are sure to produce secondary degeneration of nerve-fibres proceeding from the cortex; descending sclerosis, in fact, regularly appears when the foyer comprises the two ascending convolutions (ascending parietal and ascending frontal) and the contiguous parts of the frontal and parietal lobes.

(5) The so-called motor zone in itself, shown by clinical facts — supported by the findings of the autopsy — to be resolvable into distinct centres, each

concerned with the movements of some special part of the body. There is, for instance, a monoplegia due to lesion of the cortex. In 1883, Charcot was led to conclude from researches made with Pitres that "the cortical motor centres for the two members of the opposite side are situate in the paracentral lobule and in the superior two-thirds of the ascending convolutions; that the centres for the movements of the lower part of the face are situate in the upper third of the ascending convolutions; that the centre for the isolated movements of the arm lies in the middle third of the ascending parietal convolution of the opposite side." Nothnagel reached the same conclusion through a close analysis of a multitude of facts, and these have been confirmed by observations published since 1883. Some recent facts, moreover, go to show "that the paracentral lobule with the uppermost part of the ascending frontal and parietal convolutions has especially to do with the motility of the femur and leg."

Charcot concludes his article by reference to the facts of what is called "Jacksonian epilepsy," and its relations to certain irritative lesions of the motor zone. He considers it as established that in the great majority of cases partial epilepsy results from lesions of the cortex, limited affections with quick and progressive evolution (neoplasm, superficial encephalitis, meningitis, whether acute or chronic). The lesions which produce it are usually on the motor zone itself, but they may lie outside of it, provided the affection is capable of irritating the elements of the motor convolutions. He alludes to the impregnability of Broca's doctrine of the speech centre in the left hemisphere, and regards it as sufficiently settled that the region of the cortex, lesion of which produces "word-deafness," is in the first frontal convolution. As to *agraphia* and *word-blindness*, we are not yet absolutely settled as to the seat of the lesion which produces them.

The propositions which he has stated, no longer, he says, meet with any serious contradiction among clinicians; the apparently contradictory facts brought forward by the few opponents will not bear methodical and rigorous criticism.

EFFECT OF ERGOT ON THE INVOLUTION OF THE UTERUS.

Some experiments have recently been made by Drs. Herman and O. C. Fowler, and reported to the Obstetrical Society of London, by which the authors sought to ascertain the effect of prolonged administration of ergot on the involution of the puerperal uterus.[1] To determine whether the medicine had any action or not, they gave an ergot mixture to one set of patients, fifty-eight in number, in repeated doses daily for a fortnight after labor. To another set, sixty-eight in number, only a single dose of ergot was given after labor, and no more. In both sets of patients they measured the height of the uterus above the pubes on successive days of the lying-in period. They found that in the cases treated by the continuous administration of ergot the uterus diminished in size more rapidly than in those in which one dose only was given. They compared the two sets of cases as to the duration of the lochial discharge, but on this they did not find that the ergot treatment produced any appreciable effect.

[1] Journal of Obstetrics, May, 1887.

At the same meeting Dr. Bloxall referred to two sets of cases occurring in his Lying-in Hospital, each having to do with one hundred patients. Every alternate patient admitted to the hospital was given a mixture three times a day containing fifteen minims of liquid extract of ergot. This was kept up during the first three days of the lying-in. The two series of observations were carried on simultaneously. In the second series the routine administration of the ergot was omitted. By contrasting the two series of cases, Dr. Bloxall concludes that the practice of giving ergot during the three days following delivery tends to prevent the formation of clots, and to hasten their expulsion, and to diminish the frequency, intensity and duration of after-pains. That if omitted at first, but given afterwards, the ergot mixture tends to promote the expulsion of the clots and relieve after-pains.

Dr. Dakin at the same meeting reported some observations which seemed contradictory to the conclusions at which Drs. Herman, Fowler and Bloxall had arrived, and claimed that the results of his studies went to show that the continuous use of ergot, by keeping up a tonic state of contraction instead of allowing normal alternate contraction and relaxation, would favor retention of clots, and hinder rather than help the normal process of involution.

THE YALE THERMOMETRIC BUREAU.

The Thermometric Bureau established in 1880 in connection with the Observatory of Yale University is accomplishing a work which physicians ought to appreciate. It has examined a gradually increasing number of thermometers during the years of its existence, but its usefulness is not measured by the number of instruments that pass through its hands. There is from year to year an improvement in the quality of instruments of American manufacture submitted for verification, both actual and relative to foreign manufactures, and the Observatory claims a share of the credit for this improvement.

"It may now be fairly said — as it could not have been said before the institution of this Bureau—that the best clinical thermometers of American manufacture compare favorably with the best foreign manufactures, both in the smallness of the amount of the required corrections and in their uniformity throughout the scale." Such was the statement of the managers of the Observatory in their last year's report, and this year they find occasion to say that their good work is still progressing.

MEDICAL NOTES.

— The *British Medical Journal* quotes from the *Archives de Médecine et de Pharmacie Militaire* for last year, an account of the seventeen patients who were killed or wounded by the explosion of a shell charged with the new explosive, melinite, in the arsenal at Belfort, in March, 1887. Only six recovered from their injuries, the remainder succumbing either to severe damage to the head, trunk, bones or blood-vessels, or to septic changes. The authorities believed that the explosion was due to chemical change in the compound with which the shell was charged. In the field during a campaign, freshly-laden shells would be expected to produce yet more violent effects. The patients mostly presented characteristic appearances. There were multiple, deep, very narrow wounds of the soft parts, caused by the entry of minute cubical fragments of shell, and in the depths of the wound the raw surface appeared as though tattoed with minute particles of foreign matter, as in gunpowder explosions. The injuries to bones were markedly localized, epiphyses being in some cases shattered without fissure of the shaft. The chief peculiarity was the presence of an intense yellow discoloration of the skin in every case, communicated to the patient's linen. The fragments extracted from the wounds appeared to be metallic splinters from the shell, no melinite nor any other chemical compound could be detected, nor did the patients who recovered exhibit any symptoms of the absorption of a chemical poison.

— The *Medical Press and Circular* quotes from a report of Dr. Keegan, Presidency Surgeon of Lahore, remarks showing some estimate of the immense boon conferred upon the women of India by Lady Dufferin's movement to supply them with medical aid in childbirth. The method of conducting labors throughout Central India only a year or two ago was as follows: The native midwives, or *dhaies*, on being called to a woman in labor, hasten delivery as much as they possible can by exerting pressure on the abdomen; they have no idea of waiting upon nature. The child being born, the mother is made to stand up, and pressure is again applied to the woman's abdomen, by means of the head or bent knee of the *dhaie*. A bandage is then passed round the woman's abdomen, and she is then allowed to lie down on a charpoy under which a charcoal fire is placed, which causes the room to become excessively warm. The room selected for the confinement is usually in the very interior of the house, and may be described almost as a hermetically sealed chamber. The day succeeding the birth of the child the mother is subjected to fumigation, which is continued for about twelve days, and at the same time indigenous stimulating condiments are given, which are supposed to give milk in abundance. These condiments are used four or six weeks. The mother is allowed to drink nothing but warm water for the first ten days. In the hot season of the year the charcoal fire is used both day and night for the first twelve days succeeding the birth of the child. Subsequently it is used from evening till early morning, and is not discontinued *in toto* until the expiration of a month or six weeks. During these six weeks the child is subjected to the same atmospheric conditions as the mother, and whenever it cries more fuel is added to the fire, and the child soon ceases to cry, owing to the effects of the carbonic acid gas. Dr. Keegan adds that this method of conducting confinements is, with some slight modifications, more or less prevalent throughout the greater portion of India.

NEW YORK.

— Dr. Henry Raphæl, of New York, died at Saratoga, August 4th, in the forty-eighth year of his age. He was born in Russia, but came with his parents to this country at an early age. After a public school education, he studied medicine and was graduated from Bellevue Hospital Medical College; subsequently serving as house-surgeon in Bellevue Hospital. Up to a few years ago, he had a large private practice, but failing health compelled him to relinquish it. Dr. Raphæl is well-known to the profession by his excellent translations of Vogel's "Diseases of Children" and Von Zeissel's "Syphilis," published by the Appletons. He also translated several works of German fiction, and for several years contributed largely to current medical literature.

— The coroner's jury in the case of Mrs. Levy, who was run over and killed by a 23d Street "bobtail" car finds that her death was directly due to the system of running such cars without conductors, and condemns the system as especially pernicious in a large and populous city. It then recommends the State Legislature to take such action as will require the New York horse-car companies to provide conductors as well as drivers for every car.

Miscellany.

THE USE OF COLD IN DIARRHŒAS OF CHILDREN DURING THE HOT WEATHER.

THE *Therapeutic Gazette* speaks thus, editorially, regarding the value of the treatment of summer diarrhœa in children by cold baths:

"As the heated term is upon us, we take the liberty of calling the attention of our readers to a practice concerning which we have frequently written, but which we do not think obtains upon the profession as largely as it ought to. Any one who watches the mortality-lists of our large cities knows that any marked ascent of the average heat-record of the thermometer is accompanied by a corresponding rise in the mortality-list; also that the rise is chiefly made up of infantile deaths, such deaths in turn being in great part the result of some form of diarrhœa. Whether these cases are called cholera infantum, or summer diarrhœa, or enteritis, or colitis, we believe that they are in great part the direct result of overheating of the body, and that they are to be best combatted by the use of the cold bath. In all such cases the physician should take the temperature of the little

patient, and if, as is generally the case, the bodily heat is distinctly above normal, systematic cold bathing should be enforced. It may be necessary to give the cold bath every two hours; it may only be required three times in the twenty-four hours. At first the child usually resists the bath violently, and the prejudices of the mother are often like the wall of a fortification; but, whenever we have persevered, the results have been so marked as not only to rapidly overcome the prejudice of the mother, but also to teach the child itself the value of the bath, and cause the outcries and resistance on its part to cease entirely. We wish that this treatment would be fairly tried by our readers, and reports made thereon through our columns."

ANTISEPSIS IN TYPHOID.

Intestinal antisepsia in typhoid fever cases seems to be in a good way of becoming of the highest importance, says the Paris correspondent of the *Philadelphia Medical Times* (July 16th). In the treatment of such patients, Professor Bouchard first introduced naphthol, and Dr. Legroux is at present applying it in his service at the children's hospital with great success. As soon as a child is brought in suffering with symptoms of typhoid, the intestines are at once cleaned out with calomel, given in doses of 0.30 to 0.60 centigrammes, depending on the child's age. The next day the intestinal antiseptic treatment is commenced as follows:

℞ Naphthol beta . . } āā 2 grammes, 50
Bismuth salicylate }

M. Divide in 10 powders, and give one every hour in a wafer, or mixed with a little milk or brandy.

If the diarrhœa is not important, the bismuth may may be left out and only the naphthol given, and if on the contrary there is constipation, then the following is used:

℞ Naphthol beta . . . . . 2 grammes, 50
Magnesia salicylate . . . . 2 grammes, 50 to 5 grms

M. Divide in 10 powders, and give one every hour until the bowels are free, and then continue with the naphthol only, as before.

It will be found that there will be a diminution or entire suppression of intestinal meteorism, and that the stools are disinfected, no longer giving the fetid smell of typhoid, and also the mouth and tongue will clear up, the general state will improve, the disease will evolute quietly, and the convalescence will be shortened under this treatment. Naphthaline was tried, but it was found so disagreeable to the patients — most of them refused to take it — that it had to be stopped. It also presents some danger of absorption.

STATISTICS AND TREATMENT OF PLACENTA PREVIA.

The *American Journal for Obstetrics* summarizes a paper by Nordman on the above subject from *Archives f. Gyn*, (XXXII., 1.) The aim of the paper is to solve the question as to whether the preferable method of treatment is by combined version and slow extraction. Forty-five cases occurring at the Dresden clinic, in a total of 5,779 labors, are utilized. Twelve cases were treated by tampon or colpeurynter, with or without rupture of the membranes, delivery being allowed to take place spontaneously, with a maternal mortality of 0 per cent, and an infantile of 16.6 per cent, excluding the cases where the fœtus was dead when first seen. In twenty-three cases, version was performed followed by immediate extraction, the maternal mortality being 17.3 per cent, and the infantile 5.8 per cent, excluding cases where the fœtal heart was never heard. In six cases, version and slow extraction was the method of treatment, one mother dying of sepsis and all the children being delivered dead. Although these data decidedly speak in favor of the first methed of treatment, it should be noted that, in all the cases so treated, there was marginal insertion of the placenta, which does not expose the mother to the same risk as the total insertion. By the second method the greatest number of children were saved. Nordman concludes that this method is preferable in hospital practice, whilst in private practice version and slow extraction should be the rule, notwithstanding the excessive infantile mortality. In case of placenta previa marginalis, the tampon will answer well both from the standpoint of the mother and of the child.

EVE ON ACTINOMYCOSIS.

Mr. Frederic Eve gives some interesting examples of cases of actinomycosis in the *Practitioner*, May, 1888. This disease belongs to the large group known to pathologists as the infective granulomata, the infective element being a peculiar vegetable fungus, the growth and distribution of which are associated with tumors formed of granulation-tissue. The fungus gains access to the body by means of a lesion of some mucous membrane or of the skin. A primary tumor is thus established, from which general dissemination may take place by means of the blood and lymphatic vessels. Clinically, this disease in man presents itself under somewhat varying aspects. When attacking the maxillary region, it generally commences with pain in one or more teeth; a swelling soon appears, and, after the lapse of weeks or months, the disease culminates in a diffuse general enlargement of one side of the neck or face. The swelling becomes soft and fluctuating, but, on opening the softened areas, only a few drops of pus escaped, and the tissues are found infiltrated with a soft, spongy granulation-tissue. The progress of the malady is extremely chronic, as a rule. In actinomycosis of the lung and thorax, pain in the side, with pleurisy or pleuro-pneumonia, are commonly the first symptoms. The duration of the disease in fatal cases varies from ten weeks to a year and a half or more. Secondary formations have been found in the liver, lung, kidney, spleen, intestines, brain, ovary, heart-muscle, and in the muscles and skin. Up to 1886, an analysis of seventy-five recorded cases was drawn up by Moosbrugger. In twenty-nine the disease was in the neighborhood of the lower jaw, in the mouth and neck; in nine in the upper jaw and cheek; in one case in the tongue, and in two involving the pharynx and œsophagus; eleven in the intestines and abdominal viscera; fourteen in the bronchial tubes or lung. In seven the seat of the disease could not be ascertained. As to the prognosis of this disease, there is little chance in man of a spontaneous cure, as sometimes happens in cattle similarly affected; operative measures are successful if the affected part be completely removed, and the patient may be free from a return for years; cases of visceral actinomycosis are necessarily fatal. In cases beyond the reach of opera-

tive measures, it has been recommended to inject a solution of perchloride of mercury; but unless the disease can be eradicated by the knife in its earliest stage, there is little hope of a cure. — *London Medical Recorder*, June 20, 1888.

FOREIGN BODIES IN THE RECTUM.

MR. D. H. GOODSALL, Assistant Surgeon to St. Mark's Hospital, has published "The Notes of Twenty Cases of Foreign Bodies in the Rectum," in the twenty-third volume of the *St. Bartholomew's Hospital Reports*, recently issued. From a consideration of these notes, the *British Medical Journal* gives the author's conclusions as follows: (1) That this form of accident is more commonly met with after thirty-five years of age, the average age in the twenty cases being upwards of forty-two years. (2) That a bone takes from one to nine days to pass from the mouth to the rectum. (3) That the pain in the rectum comes on suddenly while the motion is being passed. (4) That there is constant pain and discomfort in the rectum, and sometimes also in the adjacent parts, from the time of puncture until the foreign body has been removed. (5) That the site of the puncture is within the last inch or three-quarters of an inch of the rectum. (6) That when an abscess follows the puncture it begins to form within two or three days of the puncture. That when the case is seen early and the bone promptly removed, no ill effects follow the puncture. (8) That when a fistula has formed, the patient may, unless the internal opening is large, be cured by making only a free external opening. (9) That when it is necessary to lay open the fistula the wound made (the foreign body having been removed), heals much more rapidly than the wound does in non-traumatic cases of fistula. The cause of fistula is very important in cases of candidates for life-insurance, for if the fistula be of traumatic origin, no increase should be made in the rate of premium because of such a fistula. An ischio-rectal abscess, caused by a foreign body, should be opened as soon as possible. When the case is seen soon after the foreign body has punctured the rectum and before abscess has formed, the patient should be put under chloroform and the sphincter forcibly stretched. The foreign body should then be removed, either from the rectum or by an external incision. Then about two drachms of unguentum cetacei should be introduced into the rectum. The bowels must be kept confined for three or four days and then relieved by olive oil, not by aperients.

DEUTSCH-MEDICINISCHE-SCHRIFT-SUCHT; OR, THE GERMAN MEDICAL-JOURNAL HABIT.

DR. JOHN S. HAWLEY closed an address on the above subject before the Hospital Graduates Club with the following "song," which we copy from the *Medical Analectic:*

If we write so that nouns with their verbs don't agree,
That 's German, you know, quite German, you know.
If our meaning obscure and involved seems to be,
It 's German, not English, you know.
But that kind of writing you read in Berlin,
In Heidelberg, Wien, where we 've frequently been,
Don't mind how you end, if you only begin, —
Is German, quite German, you know.

O the queer things we do, and the queer things we see
Are German, you know, all German, you know.
No man in this wide world a surgeon can be
Till he 's German, all German, you know.

We spend all our money to emulate Koch,
He 's German you know, born a German, you know.
We cultivate germs tho' our raiment we "hock"
With our uncle, who 's German, you know.
We bully our confrères with Volkmann and Braun,
With Virchow and Schroeder their arguments down,
And we knock them all out with Esmarch's renown,
They 're Germans, native Germans, you know.
O the queer names we hear, and the queer names we quote,
Are German, you know, all German, you know,
We speak them, tho' each gives us a pain in the throat,
For they're German, true German, you know.

We take out the stomach and resect the gut,
That 's German, you know, quite German, you know.
The leaves of the journals in public we cut,
When they 're German, true German, you know.
Our talk has a bacteriological drift,
We pay "twenty marks" for a pipe, for a gift,
And we quote from the *Berliner klin. Wochenschrift*,
Which is published in German, you know.
O the marvelous statements that come from afar,
Are German, you know, all German, you know,
But of course it 's all right if it 's German — *nicht wahr?*
That 's the German for "aint it?" you know.

We think it improper to poultice a boil,
No German you know, would do so, you know,
And we make salad dressing with carbolized oil,
That 's the custom with Germans, you know.
With carbolic inhalers we muzzle our jaws,
We wear underclothes of iodoform gauze,
We ignore the effect, and talk big about cause,
Which the Germans do always, you know.
O the queer things we do and the queer ways we live,
Are German, you know, all German, you know,
Of squaring the circle the method we 'll give,
Or some German will give it, you know.

We consider a coccus the cause of a gleet,
That 's German, you know, quite German you know,
We dress a cut finger in a haystack of peat,
That 's German, true German, you know.
We put in a gum larynx and a celluloid tongue,
We exsect the spleen, and we resect the lung,
We save at the spigot, and leak at the bung,—
O we 're German, we 're German, you know.
But the queer way we feel when we count up the slain,
Is not German, you know, no, not German, you know.
And we 've not enough nerve yet, to exsect the brain,
As the Germans will soon do, you know.

We write in the journals a great deal of rot,
As do Germans you know, tho' they 're Germans, you know,
And we seek a small pin in a ten-acre lot,
For the Germans can find one, you know.
We discard the choice meat and chew on the bone,
We refuse the good bread and grasp at a stone,
We hoard oyster shells and the pearls leave alone,
That 's German, true German, you know.
O the queer things we do, and the queer things we write,
Are German, you know, all German, you know.
We will swear that the ace of the spade suit is white,
If some German but says so, you know.

On sterilized pap our young infants we feed,
That 's German, you know, quite German, you know,
And we hope by such means to improve on the breed,
For the Germans advise it, you know.
In training a puppy, or raising a foal,
In the search for an office, or the seat of the soul,
Or how to fit a square stick to a circular hole,
We get points from the Germans, you know.
O the queer tricks we play with our young babies' milk,
Are German, you know, all German, you know,
Of sow's ears we make purses of superfine silk,
By a process that 's German, you know.

We pour down the beer as tho' filling a tank,
That 's German, you know, true German, you know.
And we eat Sweitzer Kase and Limburger rank,
That 's German cheese with the gangrene, you know.
Frankfurters we love, and sauer kraut, too,
And we make no mistake when the spring Bock we brew,
But we bite off more science than we ever can chew,
When we follow the Germans, you know.
O for the queer things we eat, and the good things we drink,
Thank the Germans, you know, bless the Germans you know,
But we ball up our science, and our good sense we kink,
When we try German methods, you know.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 4, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	814	428	37.56	11.19	26.13	1.32	3.84
Philadelphia	1,016,758	471	233	31.92	9.03	18.06	9.45	.84
Brooklyn	751,432	409	247	9.11	9.11	.72	.24	3.60
Chicago	760,000	441	—	39.55	3.91	33.12	2.26	2.26
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	235	114	35.26	—	27.95	3.01	.43
Boston	407,024	244	127	31.57	11.48	26.65	.82	.82
Cincinnati	325,000	144	—	28.29	6.94	21.39	2.07	2.07
New Orleans	248,000	145	49	21.38	13.79	4.04	.68	1.36
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	130	65	47.74	10.01	26.95	6.16	2.31
Pittsburgh	210,000	122	69	39.36	7.38	26.24	4.92	.82
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	28	7	21.42	21.42	—	3.57	—
Charleston	60,145	45	20	4.44	24.42	4.44	—	—
Portland	40,000	9	2	11.11	33.33	11.11	—	—
Worcester	76,328	62	42	43.47	1.61	37.03	—	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	30	18	50.00	6.66	46.62	—	3.33
Fall River	61,203	41	30	51.24	9.76	51.24	—	—
Lynn	51,467	20	—	5.00	10.00	—	5.00	—
Lawrence	40,175	22	13	40.86	9.00	40.86	—	—
Springfield	39,952	14	9	64.26	—	64.26	—	—
New Bedford	36,298	15	9	46.62	—	46.62	—	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	9	2	22.22	22.22	11.11	—	—
Chelsea	27,552	9	5	22.22	—	22.22	—	—
Haverhill	24,979	13	8	46.14	15.38	38.45	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	5	3	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	9	6	33.33	—	11.11	—	11.11
Malden	18,932	6	3	50.00	—	16.66	—	16.66
Fitchburg	17,534	10	7	20.00	—	10.00	—	—
Waltham	16,651	4	2	50.00	—	50.00	—	—
Newburyport	13,839	9	2	—	—	—	—	—
Northampton	13,419	9	4	55.55	22.22	55.55	—	—

Deaths reported 3,514: under five years of age 1,524; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,151, consumption 308, acute lung diseases 152, diarrhœal diseases 779, typhoid fever 97, diphtheria and croup 87, whooping-cough 67, malarial fever 33, scarlet fever 32, measles 28, cerebro-spinal meningitis 12, puerperal fever seven, small-pox five, erysipelas four. From whooping-cough, New York 19, Washington 10, Philadelphia nine, Brooklyn seven, Chicago six, Cincinnati and Pittsburgh four each, Boston and New Orleans two each, Baltimore, Haverhill, Newton and Fitchburg one each. From malarial fevers New Orleans 11, New York and Baltimore six each, Brooklyn and Washington four each, Philadelphia two. From scarlet fever New York 22, Brooklyn six, Pittsburgh three, Philadelphia one. From measles New York 17, Chicago five, Brooklyn and Baltimore two each, Pittsburgh and Worcester one each. From cerebro-spinal meningitis, Chicago four, Worcester three, New York and Washington two each, Nashville one. From puerperal fever Chicago four, New York two, Baltimore one. From small-pox, Philadelphia five. From erysipelas, New York, Brooklyn, Chicago, and Pittsburgh one each.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending July 21st, the death-rate was 16.0. Deaths reported 2,884: infants under one year of age 777; acute diseases of the respiratory organs (London) 166, diarrhœa 105, whooping-cough 68, measles 50, scarlet fever 31, fevers 27, diphtheria 23, small-pox (Sheffield two, London, Bristol, Preston, and Hull one each) six.

The death-rates ranged from 12.2 in Brighton to 21.1 in Manchester: Birmingham 16.1; Blackburn 13.2; Bradford 16.1; Leeds 18.9; Leicester 14.9; Liverpool 15.3; London 15.8; Nottingham 12.7; Sheffield 15.9; Sunderland 14.2.

In Edinburgh 16.3; Glasgow 23.1; Dublin 19.4.

BOOKS AND PAMPHLETS RECEIVED.

Announcement of Gross Medical College of Denver. Medical Department of the Rocky Mountain University. Session 1888–1889.

Eclectic Medical College of the City of New York. Twenty-Eighth Announcement and Catalogue for Session of 1888-89.

Intestinal Obstruction. When should Operative Measures be Resorted to in Intestinal Obstruction? By Albert Vander Veer, A.M., M.D., Albany, N. Y., Professor of Surgery in the Albany Medical College, Fellow of the British Gynecological Society, etc.

The History of Abdominal Section in Albany, with a Report of Seventy-Five Cases. By Albert Vander Veer, M.D., Professor of Surgery in the Albany Medical College, Fellow of the British Gynecological Society, etc. Reprint. 1888.

The Formation and Excretion of Uric Acid considered with Reference to Gout and Allied Diseases. By A. Haig, M.A., M.D., Oxon, M.R.C.P., Physician, Royal Hospital for Children and Women, Waterloo Road; Assistant Physician, Metropolitan Hospital. London: John Bale & Sons. 1888.

A Case of Multiple Neuritis in a Woman, of Combined Syphilitic and Alcoholic Origin; Treatment by Electro-Massage; Complete Recovery. By Andrew Smart, M.D., F.R.C.P.E. Reprint. 1888.

The Medical and Surgical History of the War of the Rebellion. Part III, Vol. I; Medical History. Being the third medical volume. Prepared under the direction of the Surgeon-General U. S. A., by Charles Smart, Major and Surgeon U. S. A. Washington: Government Printing Office. 1888.

Annual Catalogue and Announcement of the College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College. With an account of the new buildings. 1888.

Intracranial Tumors. By Byrom Bramwell, M.D., F.R.C.P.E., F.R.S.E., Lecturer on the Principles and Practice of Medicine in the Extra-Academical School of Medicine, Edinburgh, etc. With 116 illustrations. Philadelphia: J. B. Lippincott & Co. 1888.

Some Retrospective and Prospective Thoughts on Surgery. By Donald Maclean, M.D., of Detroit, Chairman of the Section on Anatomy and Surgery, Professor of Surgery and Clinical Surgery in the University of Michigan. Reprint. 1888.

The meteorological record for the week ending August 4, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
Saturday, Aug. 4, 1888.	Daily Mean.	Daily Mean.	Maximum.	Minimum	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday, 29	30.06	63.0	70.0	56.0		74.0	74.0	W.	S.W.	8	8	O.	O.	.10	*T
Monday, 30	29.88	72.0	84.0	60.0		72.0	70.0	N.E.	S.W.	6	12	C.	C.	0	.0
Tuesday, 31	29.75	73.0	82.0	65.0		100.0	87.0	W.	S.W.	18	19	C.	R.	2.	*T
Wednes,.. 1	29.93	67.0	77.0	64.0		61.0	56.0	N.	W.	14	13			2.	.26
Thursday, 2	29.97	74.0	87.0	61.0		59.0	58.0	W.	N.W.	5	5	C.	C.		.0
Friday, ... 3	29.98	72.0	82.0	65.0		62.0	58 0	N.	S.W.	3	6	C.	C.		.0
Saturday,. 4	30.18	74.0	88.0	66.0		69.0	68.0	S.W.	W.	15	20	O.	F.	.10	*T
Mean, the Week.	29.910	70.7	81.0	62.00			67.3								

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FOR WEEK ENDING AUG. 11, 1888.

LAUDERDALE, J. W., major and surgeon U. S. A. July 28th, promoted to surgeon U. S. A., with rank of major, to rank from July 3, 1888.

CORSON, JOSEPH H., assistant surgeon U. S. A. Leave of absence extended one month. Paragraph 17, S. O. 178, A. G. O., August 2, 1888.

MASON, CHARLES F., first lieutenant and assistant surgeon U. S. A. Reappointed July 28, 1888, to rank from July 2, 1888. Reported for duty at Fort Washakie, Wyo., August 2, 1888.

MERRILL, JAMES C., assistant surgeon U. S. A. Granted one month's leave of absence from August 3, 1888. Paragraph 7, S. O. 178, A. G. O., August 2, 1888.

GARDINER, JOHN DE B. W., assistant surgeon U. S. A. Will on the expiration of his present sick leave of absence, report in person to the commanding officer at Fort Leavenworth, Kan., for duty. Paragraph 4, S. O. 178, A. G. O., August 2, 1888.

SOCIETY NOTICES.

AMERICAN ORTHOPEDIC ASSOCIATION. — Preliminary Programme of the meeting to be held in Washington, September 18, 19, and 20, 1888.

(1) Newton M. Shaffer, New York: The Modern Treatment of Chronic Joint and Spinal Disease. (2) V. P. Gidney, New York: Immobilization in Articular Disease. Report on the Treatment of Club-Foot by means of the Thomas Wrench, or the "T. T." (3) Henry L. Taylor, New York: Mechanical Treatment of Senile Coxitis. (4) A. B. Judson, New York: A Practical Point in the Treatment of Pott's Disease of the Spine. (5) C. F. Stillman, New York: An Efficient and Inexpensive Method for the Mechanical Treatment of Pott's Disease. (6) John Ridlon, New York: Rest, in the Treatment of Chronic Joint Diseases. (7) Dillon Brown, New York: Acute Epiphysitis in Infants. (8) Samuel Ketch, New York: Remarks on Lateral Curvature and its Early Treatment. (9) De Forrest Willard, Philadelphia: Osteotomy for Anterior Tibial Curves. (10) T. G. Morton, Philadelphia: Description of an Apparatus for Measuring any Inequality in the Lengths of the Lower Extremity. (11) Benj. Lee, Philadelphia: Hæmatoma Oris, as a Sign of Injury to the Spine in the Superior Cervical Region. (12) J. A. Steele, St. Louis, Mo.: Two Knee-Joint Excisions. (13) H. Hodgen, St. Louis, Mo.: Report on Morton's Operation for the Immediate Reduction of Club-Foot. (14) Ap. Morgan Vance, Louisville, Ky.: Femoral Osteotomy. (15) George W. Ryan, Cincinnati, Ohio: A Case of Reflex (?) Valgus. (16) W R. Whitehead, Denver, Col.: Remarks on the Operative and Mechanical Treatment of some Joint Diseases and Injuries; with Especial Reference to the Hip, Knee and Elbow Joints, with Illustrative Cases. (17) E. H. Bradford, Boston, Mass.: Analysis of Treatment of Seventy Cases of Club-Foot.

LEWIS HALL SAYRE, *Secretary*.

285 Fifth Avenue, New York.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS. — Programme of the Second Annual Meeting of the AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS, to be held at Washington, D. C., September 18, 19, and 20, 1888.

Officers for 1888. President, Dr. Edward L. Keyes, of New York. Vice-President, Dr. George Chismore, of San Francisco, Cal. Secretary, Dr. Robert W. Taylor, of New York. Members of the Council, Dr. John H. Brinton, of Philadelphia, Pa., and Dr. Francis B. Greenough, of Boston, Mass., together with the officers of the Association.

First Day. Tuesday, September 18th. — Business Meeting at 9 A. M. Morning Session at 10 A. M. Address of Welcome, by the President, Dr. Edward L. Keyes. Pyæmia as a Direct Sequel of Gonorrhœa, by Dr. Roswell Park, of Buffalo, N. Y. Clinical Observations on Gonorrhœa, with Special Reference to Etiology, Duration and Treatment, by Drs. John P. Bryson and Edwin C. Burnett, of St. Louis, Mo. Retrojections in Gonorrhœa, by Dr. Edward R. Palmer, of Louisville, Ky. Local Treatment of Chronic Urethral Discharges, by Dr. Frederick R. Sturgis, of New York. On the Relation of the Prostate to Chronic Urethral Discharges, by Dr. J. William White, of Philadelphia, Pa. The Diagnosis and Treatment of Chronic Urethritis, with Demonstrations of Instruments, by Dr. Oberländer of Dresden, Germany. To be read by Dr. John A. Fordyce, (by invitation). Adjournment at 1.30 P. M. Afternoon session at 3 P. M. Connection between Masturbation and Stricture of the Urethra, by Dr. Samuel W. Gross, of Philadelphia, Pa. The Curability of Urethral Stricture by Electricity: An Investigation, by Dr. Edward L. Keyes, of New York. On the Radical Cure of Stricture of the Urethra by Dilating Urethrotomy, by Dr. Fessenden N. Otis, of New York. The Prognosis of Stricture Based on Thirty Years' Death Record at the London Hospital and the Practice at St. Peter's Hospital, by E. Hurry Fenwick, F.R.C S., of London, England. (By invitation.) Some Points on the Etiology of Stricture of the Urethra, by Dr. Robert W. Taylor, of New York. Adjournment at 6 P. M.

Second Day. Wednesday, September 19th. — Business Meeting at 9 A. M. The Operative Treatment of Hypertrophy of the Prostate, with Stereopticon Demonstrations of Specimens, etc., by Dr. Francis S. Watson, of Boston, Mass. Prostatotomy for Enlarged Prostate at the Age of Forty-Two Years, by Dr. Abner Post, of Boston, Mass. The History of the Filaria Sanguinis Hominis: Its Discovery in the United States, and Especially the Relationship of the Parasite to Chylocele of the Tunica Vaginalis Testis, Dr. William M. Mastin, of Mobile, Ala. Clinical Observations on Diseases of the Testicle, by Dr. L. Bolton Bangs, of New York. Case of Removal of Both Testicles for Recurrent Carcinoma, by Dr. Frank W. Rockwell, of Brooklyn, N. Y. Adjournment at 1.30 P. M. Afternoon session at 3 P. M. Some Points in the Differential Diagnosis of Bladder and Kidney Affections, with Demonstrations of the Cystoscope and Other Instruments, by Dr. Alexander W. Stein, of New York. Demonstration of a Perfected Evacuator and an Improvement in the Method of Removal of Débris from the Bladder, by Dr. Fessenden N. Otis, of New York. Stone in the Bladder in Connection with Splenic Leuchæmia, by Charles Williams, F.R.C.S., of Norwich, Eng. (By invitation.) Lithol-apaxy in Male Children, by Surgeon-Major Keegan, of Indore, Central India. (By invitation.) Case of Perineal Section for Traumatic Retention — Unusual Condition of the Bladder, by Dr. J. E. Michael, of Baltimore, Md. Adjournment at 6 P. M.

Third Day. Thursday, September 20th. Business Meeting at 9 A. M. Operations on the Kidney, by Dr. William H. Hingston, of Montreal, Canada. On the Effects of Rapid Changes of Altitude in an Advanced Case of Interstitial Nephritis, by Dr. George Chismore, of San Francisco, Cal. Case of Nephro-Lithiasis, Complicated with Hydro-Nephrosis, in which Lumbar Nephrotomy was Performed, by Dr. Frank W. Rockwell, of Brooklyn, N. Y. Malignant Tumors of the Seminal Vesicles; Two Cases with Specimens, by Dr. John B. Bryson, of St. Louis, Mo. Adjournment at 1.30 P. M. Afternoon session at 3 P. M. Case of Bowel Ending in the Urethra of a Child Four Weeks Old — Relief by Operation, by Dr. Arthur T. Cabot, of Boston, Mass. Unusual Case of Urethral Calculus, by Dr. Harvey G. Mudd, of St. Louis, Mo. The Congenital Anomalies of the External Urethral Orifice, by Dr. B. Kaufmann, of Zürich, Switzerland. (By invitation.) The Prophylaxis of Syphilis, by Dr. Prince A. Morrow, of New York. Syphiloma of the Vulva, by Dr. J. Nevins Hyde, of Chicago, Ill. The Value of the Tolerance of the Iodides as a Diagnostic of Syphilis, by Dr. J. William White, of Philadelphia, Pa. And papers by Dr. Félix Guyon, of Paris, France, Dr. Freund, of Strasburg, Germany, and others. Retirement of Old and Induction of Newly Elected Officers. Adjournment at 6 P. M.

Original Articles.

THE VALUE OF CORROSIVE SUBLIMATE AS A PRACTICAL DISINFECTANT.[1]

BY WILLIAM B. HILLS, M.D., OF CAMBRIDGE.

IT is only within a comparatively few years that the exact nature of infectious material has been determined with any approach to certainty. Previous to this time, our knowledge of the relative value of disinfectants was necessarily very inexact, and their mode of action, although the occasion for numerous theories, entirely unknown. It was assumed, however, that infection had its origin in putrefactive processes. Any substance, therefore, which arrested such processes, or destroyed their chemical products, was considered to possess more or less value as a disinfectant. The only known test of the efficiency of these was their power to arrest decomposition, and this was determined by the presence or absence of odor.

Investigations of recent years, however, have proved as exclusively, perhaps, as is possible that certain infectious diseases are caused by micro-organisms. Consequently, all processes of disinfection are now based on the view that all such diseases are caused by micro-organisms, or by poisons which are produced by the vitality of such micro-organisms. In the present state of our knowledge, therefore, we consider as disinfectants those substances only which have the power of destroying the vitality of micro-organisms.

When the various substances formerly employed as disinfectants were measured by this test, it was found that nearly all of them are much less valuable than was formerly supposed; while some, including ferrous sulphate and the salts of zinc, which had for some years been considered of inestimable value, are absolutely worthless. The hypochlorites, which have always occupied a prominent place in the list of disinfectants because of their power to destroy organic matter and the chemical products of putrefaction, were found to be in fact very efficient; though it is probable that, as they had been hitherto employed, they were more often inefficient than otherwise, owing to a lack of any definite knowledge regarding the proper amount to be employed. With this exception, however, the only metallic salt found to have distinct value for practical disinfection was corrosive sublimate. This salt had been recognized for many years as an efficient antiseptic, and had also been included in the list of supposed disinfectants; but it had not been shown, by the tests employed previous to 1880 or thereabout, to have a superiority over other metallic salts of its class, sufficient to compensate for its expense and poisonous properties.

Our knowledge regarding the relative value of disinfectants as measured by their power to destroy micro-organisms dates from the researches of Robert Koch, published in 1881. Koch found that most micro-organisms are destroyed by a solution of corrosive sublimate of the strength of 1:5000; while a solution of the strength of 1:1000 is fatal to all. He also found that corrosive sublimate has a decided superiority over all other substances as an antiseptic. A solution of the strength of 1:1000000 had a marked restraining power on the germination of the spores of the *B. anthracis*, for example, while a solution of the strength of of 1:300000 prevented their development. The results of other investigators, while showing that its antiseptic and disinfecting powers are possibly not quite so great as claimed for it by Koch, still confirm the latter so far as to show that they are considerably greater than those of any other known substance, with the possible exception of one or two other salts of mercury, which for one reason or another are not so available.

As a result of these investigations, and more directly following the recommendations of the Committee on Disinfectants of the American Public Health Association, published in 1885, corrosive sublimate has taken the place, to a large extent, of all other disinfectants, for nearly every purpose excepting aërial disinfection. Every State Board of Health, to whose reports, for the past four or five years, I have been able to obtain access, has published the recommendations of this committee, thus giving them a wide circulation, and nearly every one has distinctly endorsed them as representing the best methods of disinfection known to us. The Board of Health of Maine alone objects to corrosive sublimate, on account of its poisonous properties, and because it forms an insoluble compound with albumen. Figures showing the exact extent to which it is used, can be obtained, if at all, only through local Boards of Health, and the reports of these are not easily accessible. There were used, however, in the city of Boston, according to the reports of the Board of Health, in 1884, 850 pounds; in 1885, 1,550 pounds; in 1886, 1,400 pounds; and in 1887, 2,250 pounds of corrosive sublimate for purposes of disinfection.

The value of corrosive sublimate, as measured by its power to destroy micro-organisms in aqueous solutions, is not denied. But the efficiency of a disinfectant, and the amount required for certain disinfection, vary with the nature of the material to be disinfected. The disinfecting power of corrosive sublimate for instance, is greater in an aqueous solution than it is in an albuminous solution; for in the latter case a part or the whole of the disinfectant unites with the albumen, forming a compound which has little or no disinfecting power. Thus Klein [2] found that one and the same kind of blood bacillus was completely killed by an aqueous solution of corrosive sublimate of the strength of 1:25000, whereas it remained unaffected by a solution in nutrient gelatine of the strength of 1:20000 of fluid, — or even by a solution in broth of the strength of 1:10000. In all processes of disinfection with chemical disinfectants, we should therefore take into consideration the chemical changes which the disinfectant undergoes when it is added to the material to be disinfected. If we act upon germs in the presence of material which is capable of forming, with the disinfectant employed, inert compounds, it is clear that the germs are likely to escape unharmed, unless we add such a quantity of the disinfectant that it shall be in sufficient excess after the chemical change is complete. Even then we do not attain perfect disinfection, if the inert compounds are such as are able to protect the germs in any way from the action of such excess. This is the case when we employ corrosive sublimate, or any other substance which coagulates albumen, for the disinfection of albuminous material. Under these conditions a coagulum is formed, and germs included within such solid masses may escape

[1] Read before the Massachusetts Medical Society, June 13, 1888, and recommended for publication by the Society.

[2] Report of the Local Government Board, London, 1885-6, page 155.

destruction and develop later when the material is thrown into the vault or other similar receptacle; for the excess, if any, is in turn converted to inert compounds by the albuminous material, ammonia, sulphuretted hydrogen or other substances with which it there comes in contact, or it is so far diluted as to become inefficient.

Considering corrosive sublimate in connection with these facts, we see no reason for denying that it is an efficient practical disinfectant for certain of the purposes for which it is recommended by the committee on disinfectants, and employed in this and other countries; bearing carefully in mind, however, that its use is for obvious reasons unjustifiable unless we can dispose of it in some other manner than through lead pipes. But for the disinfection of the excreta, vomited matters, sputum, etc., of persons sick with diseases known or suspected to be infectious, or for the disinfection of clothing or bed-linen soiled with such material, it is wholly unreliable, and is so recognized by sanitarians abroad. Yet a solution of the strength of 1:500 is recommended for these purposes by the committee on disinfectants, and following them, by most of the Boards of Health in this country.

An examination of the report of this Committee fails, however, to bring to light the slightest particle of evidence upon which such a recommendation could have been based. The statements made relative to corrosive sublimate are very contradictory and confusing; the biological tests recorded are few in number and very unsatisfactory; and the report, as a whole, shows evidence of hasty preparation, and is not at all creditable to the Committee. A brief review of the alleged evidence presented by this Committee in favor of corrosive sublimate will, I think, prove the correctness of this criticism.

It is to be observed, first, that the Committee recognize the fact that the quantity of disinfectant required for perfect disinfection depends upon the nature of the material in which the germs are contained — provided, however, the disinfectant is an oxidizing disinfectant. On page 19 of the report the apparently contradictory results obtained in two series of experiments with potassium permanganate are thus explained: "The wide difference as to the quantity of the disinfecting agent required in two series of experiments depends upon an essential difference in the nature of the fluid in which the germs to be destroyed were contained. The large amount of organic material present in the blood, as compared with that in the culture fluid used in the second series of experiments, fully accounts for the difference, for the disinfecting agent is, itself, destroyed by contact with organic matter."

Also, on page 14, we find the following: "The fact that the oxidizing disinfectants are destroyed in the reaction to which their disinfecting power is due, makes it necessary to use them in excess of the amount of organic material to be destroyed; otherwise germs included in masses of material not acted upon would be left intact in a fluid which is no longer of any value for their destruction, and, as a few germs may be as potent for mischief as a large number, there would be a complete failure to accomplish the object in view." The Committee make essentially the same statement on page 117, and thus conclude: "The only safe rule in the practical use of oxidizing disinfectants is to *use such a quantity of the disinfecting agent that it shall be in excess after the reaction has taken place.*" But, if it is necessary to take into consideration the chemical changes which take place in the use of oxidizing disinfectants, why is not the same precaution necessary in the use of all disinfectants? For there is scarcely a substance which has been suggested as a disinfectant which may not undergo some chemical change when brought into contact with such organic mixtures as require disinfection, and there is none which is more liable to change than corrosive sublimate. The Committee, however, either ignorant of this fact, or forgetting it in their haste, actually use the oxidizing property of the hypochlorites, which makes them the most valuable chemical disinfectants at our disposal (since, if we use an excess, we destroy organic matter and germs at the same time), as an argument against them and in favor of corrosive sublimate, which not only may undergo more changes than do the hypochlorites, but such changes as may render it absolutely worthless.

"For this reason," they say (page 14), "the metallic salts, such as corrosive sublimate, which are not destroyed by contact with organic matter have a superior value for the disinfection of masses of material left *in situ*, such as the contents of privy-vaults and cess-pools. In this case, even if germs enclosed in an envelope of albuminate of mercury escape destruction, they will be prevented from doing mischief so long as they are included in such an envelope, and the wonderful antiseptic power of the reagent used will prevent their development for a sufficient length of time to ensure the complete loss of vitality of any pathogenic organisms present." It is, however, a well-known chemical fact that corrosive sublimate *is* destroyed, or, at least, undergoes chemical changes when brought into contact with organic matter. It is immediately converted by albumen to the insoluble albuminate of mercury. For this reason, albumen is recognized as the most efficient antidote in cases of poisoning by corrosive sublimate. Corrosive sublimate in solution is further decomposed by a very large number of other compounds, organic and inorganic, and by unknown constituents of most organic mixtures. There are but few substances whose range of incompatibilities is so wide. The Committee apparently admit the possibility of its uniting with albumen, but think we shall, even then, attain perfect disinfection, because the germs will be imprisoned within the envelope of albuminate of mercury, and will *probably* be prevented from developing. But this is not disinfection. Disinfection consists in the *destruction* of disease germs.

Later, the Committee realize their error, and admit the inefficiency of corrosive sublimate for the disinfection of excreta. Sternberg thus writes (page 59), referring to some experiments which show that this substance is not efficient for the disinfection of fresh tuberculous sputum: "The experiments of Schill and Fischer, which I had not read when the recommendation was made (referring to the use of corrosive sublimate for the disinfection of sputum and fæcal discharges), indicate that it will be necessary to use some other agent when the object in view is to destroy the infective virulence of tuberculous sputum. And in general it will no doubt be better to use an oxidizing disinfectant, such as the hypochlorite of soda, when the germs to be destroyed are imbedded in masses of albuminous material; for such masses are disintegrated and destroyed by oxidizing agents, whereas corrosive

sublimate has the opposite effect in consequence of its power of combining with and coagulating albuminous material." And yet the Committee has recommended a solution of corrosive sublimate of the strength of two drachms to a gallon of water as equally efficient with chloride of lime for the disinfection of excreta, vomited matters, and sputum. Sternberg himself, in his Lomb prize essay, recommends chloride of lime as the most efficient agent for the disinfection of excreta, and recommends corrosive sublimate as efficient for liquid discharges only. But its value for *this* purpose must necessarily depend on the character of the discharges. If they contain albuminous matter in quantity sufficient to form with the disinfectant a coagulum, they cannot be disinfected by it with any more certainty than can solid discharges. The experimental evidence upon which this recommendation is based will be presented later.

The employment of corrosive sublimate for the disinfection of large masses of material, such as the contents of vaults, cess-pools, etc., is absurd, and would not deserve serious notice were it not for the fact that the report of the Committee on Disinfectants, recommending it for this purpose, has been so widely accepted. But the Committee, in a note inserted after their recommendations were printed, admit that the complete disinfection of such masses is difficult and expensive, and probably impracticable, and insist upon the necessity of destroying infectious material before it is thrown into receptacles of this kind. This admission, however, appears to be based upon impracticability due solely to expense and obvious mechanical difficulties, and not to changes tending to render the disinfectant inefficient. But, if a disinfectant is for any reason inefficient for the disinfection of small quantities of excreta, it is for the same reason inefficient for the disinfection of large quantities. The action of corrosive sublimate upon albumen is, therefore, a fatal objection to its use for this purpose. But such decomposing masses are constantly disengaging ammonia and sulphuretted hydrogen, both of which convert corrosive sublimate into insoluble compounds, and, owing to the high atomic weight of mercury, these gases fix comparatively large amounts of this metal.

Decomposing excreta also contain alkaline carbonates, phosphates, urea, and doubtless many other substances which react with corrosive sublimate and destroy its efficacy, for there is no reason for believing that any of the resulting compounds have any disinfecting power.

It has been suggested, however, that the albuminate of mercury, which is slightly soluble, has germicide and antiseptic powers sufficient to make it superior to all other disinfectants for this purpose, and that this can be relied upon to prevent the development of such germs as are imprisoned within the coagulum of albuminate of mercury. Professor Vaughan, for instance, considers it probable that the value of corrosive sublimate as a disinfectant is due to the formation of this albuminate; and Sternberg, in the *Medical Record* for August 1, 1885, affirms positively that the albuminate is a potent germicide, but gives no facts in support of this statement. Klein's experiments, however, suggest that its germicide power is very slight at the most. Admitting, however, that it has such power, the amount re-dissolved is very small, and this is likely to be converted at once to the inert sulphide by the sulphuretted hydrogen present.

Used as recommended by the Committee, corrosive sublimate is a good deodorizer so far as it goes; but has no more value probably than the ferrous sulphate which it has to a great extent superseded.

If we examine the experimental evidence upon which corrosive sublimate is recommended as an efficient agent for the disinfection of solid excreta, we find that it comprises ten or twelve biological tests made with pure cultures of micro-organisms, or with broken-down beef-tea, or with semi-solid fæces. Some of these were successful, others were failures. It does not appear to have occurred to the Committee that the *nature* of the material acted upon had any influence on the result in the unsuccessful experiments, or that any further investigation was desirable for the purpose of discovering the cause of the failures. But it was assumed that the *quantity* of material was too great for the amount of disinfectant employed, and that, if the latter had been added in larger quantity, or if the time of exposure had been longer, the experiment would have been successful. A liberal allowance was, therefore, made on the side of safety, and a recommendation made accordingly. The evidence upon which corrosive sublimate is recommended for the disinfection of liquid discharges is the following: "The liquid discharges from the bowels of patients with cholera, typhoid fever, advanced tuberculosis, septic diarrhœa, etc., may be fairly compared with our broken-down beef-tea as regards physical and biological characters." The amount required to sterilize a certain quantity of broken-down beef-tea was, therefore, determined, multiplied by two, and the product recommended as efficient for the sterilization of an equal amount of liquid fæcal discharge. A recommendation based upon experimental work of this amount and character is not creditable to a Committee of the leading Sanitary Association of this country, and is not entitled to the favor with which the one in question has been received.

The importance of the disinfection of excreta, etc., cannot be over-estimated. It is conceded that such material must be disinfected before it is thrown into the vault or similar receptacle, because of the impracticability of disinfecting large masses of matter. A disinfectant, to be effective, must have penetrating power sufficient to bring it into intimate contact with every portion of the material to be disinfected. Corrosive sublimate does not have this power, owing to its property of coagulating albumen. It should, therefore, be replaced, if possible, by some agent to which this objection cannot be made. We have such an agent in chloride of lime. It has the power of penetration; it oxidizes and destroys organic matter, and it is, in addition, an efficient germicide, bearing in mind the fact that it must be used in such quantity that it shall be in sufficient excess after the reaction between it and the organic material is complete.

Corrosive sublimate, in a word, though a very efficient disinfectant, as measured by its power to destroy germs, is limited in its applications. It can be used for the disinfection of furniture and other articles made of wood or porcelain, or even metal, if varnished, the floors and walls of rooms, such parts of ships as can be reached with solutions, the hands and the surface of the body, and clothing and bed-linen, if not soiled with discharges; in other words, for the disinfection of surfaces which are not themselves injured by contact with it, or surfaces which do not contain

material of such a character as to destroy its efficiency. Its use for these purposes is, however, very much restricted, because we have no means of disposing of it, except through lead pipes.

Objections have been made to it because of its poisonous character. The danger of poisoning, however, is very slight. The solutions employed are very dilute, and its taste is sufficiently disagreeable to attract attention before an amount sufficient to do any injury has been taken. If the solutions are colored, the danger of mistakes is much lessened. The same objection may be made with equal reason against all substances which we now recognize as disinfectants. Care is necessary in the employment of all of them, and those entrusted with their use should be informed of their properties, that all necessary precautions may be taken.

There is, however, one process of disinfection with corrosive sublimate to which this objection may with some reason be made. I refer to its use for the disinfection of streets, for which purpose it has been employed by the Board of Health of Boston for the past two years or more. If its use for this purpose is continued, the time cannot be far distant when the beds of the streets will become saturated with various compounds of mercury. All of these, so far as we have any knowledge of them, are violent poisons. Is any danger to be apprehended from continually inhaling or swallowing, month after month, dust loaded with compounds of mercury? This is a question deserving serious consideration at the hands of the Board of Health. While not claiming that the process is positively a dangerous one, I believe it is one which involves some risks, and one which it is advisable, therefore, to discontinue.

UTERINE DISPLACEMENTS AND THEIR INFLUENCE ON THE GENERAL NERVOUS SYSTEM.[1]

BY FRANCIS H. DAVENPORT, M.D.

UTERINE displacements have from the earliest times about which we have any medical knowledge been recognized as existing, and as giving rise to disturbances both general and local. It is probable that prolapse and procidentia, as being malpositions which would most quickly and surely be seen, were the first to be diagnosticated and treated. Later, as the vaginal examination became perfected, would follow the forward and backward displacements, reserving for these days of gynæcological enlightenment the recognition of the more refined shades of departure from the normal, which have filled our text books with subvarieties, and for whose relief a legion of pessaries has been invented.

The impetus which has been given to the study of this branch of medicine in the last twenty-five or thirty years has resulted in placing a great deal that is of value on a sound basis. With regard to the special branch of uterine disease which is the subject of this paper, the following may be said: We have learned to diagnosticate the various malpositions to which the uterus is liable, and the tactus eruditus is now seeking new worlds to conquer. Tubes and ovaries whose recognition by a large proportion of practising physicians is still a matter of considerable difficulty are palpated by the trained gynæcologist, and their pathological changes diagnosticated with wonderful ease. The more remote and insignificant structures of the pelvis are now trying in vain to elude the searching finger of the specialist; and in one of the latest text books minute and lengthy rules are given for finding not only the round ligament and ureter, but even for differentiating the various muscles of the pelvic floor, and palpating the pelvic arteries and nerves.

The chapter on the diagnosis of displacements may in a certain sense be said to be closed. So, too, with the mechanical treatment of these disorders. Necessity is the mother of invention, and the skill and perseverance of the gynæcologist in overcoming the difficulties he has had to contend with, have resulted in the multiplication of pessaries of all forms from the external to the intra-uterine, and of substances as various as ingenious, to meet all possible varieties. Slight modifications will continue to appear, but they will be on the lines already marked out, and will in all probability embody no new principle. It is to my mind a fair indication of the feeling which may be supposed to govern the question of treatment in the small proportion of cases which do not show themselves amenable to the mechanical devices alluded to, that progress is in the direction of operative measures, and that too of a bolder character than would have been dreamed of twenty or even ten years ago. Who, for instance, twenty years ago would have thought in his wildest moments of performing laparotomy and suturing the fundus uteri to the abdominal wall to cure an obstinate retroflexion? Yet that has been repeatedly done. It is an outcome to be sure of the feeling of security with regard to opening the abdominal cavity which the splendid results of our leading specialists have developed. Yet still other indications, less striking perhaps, but showing the same tendency, are the Alexander operation of shortening the round ligaments, Säuger's bold procedure of forcibly separating adhesions of the uterus to adjacent parts under ether, or Byford's proposition to shorten the sacra-uterine ligaments by an operation from the vagina.

While such questions as these are, as I have said, practically settled, it is a beneficent law which holds good in any department of human knowledge that it cannot be exhausted. Certain outposts are taken and occupied, and the scene of the conflict shifts to new ground. We know the course which the blood takes in its rapid circulation through the body. We busy ourselves now with counting the millions and billions of white and red blood corpuscles, and noting their varying proportions in disease, or discussing the microscopical character of the membrane which forms the coat of the capillaries. So the question concerning displacements, about which doubt exists to-day, and which are the subjects of discussion, are on entirely different lines from those we have mentioned above.

Curiously enough, one question which it would seem would naturally be the first to be settled, is only recently being met with any unanimity of sentiment. I refer to the normal position of the uterus. It is begging the question to affirm, as some writers do, that an organ, suspended in the pelvis between other organs liable to such temporary variations of size as the bladder and rectum, can have no normal position. On the other hand, it is manifestly absurd to judge a freely movable organ by the same rules as we would a spleen or kidney, and make any deviation from an arbitrary fixed

[1] Read before the Massachusetts Medical Society, June 12, 1888, and recommended for publication by the Society.

standard a malposition. The truth seems to lie between, and the most accurate observers now recognize a normal position of the uterus which varies within certain bounds according to the condition of the adjacent pelvic viscera.

I have said that the question of the mechanical treatment of displacements was practically settled, meaning by that that where such treatment was indicated, the principles on which it would be carried out were essentially known. There still exists, however, great difference of opinion as to the advisability or necessity of such treatment at all. Some writers, a respectable minority at least, maintain that displacements of the uterus very seldom give rise to symptoms, and that when they do general treatment is preferable to local. Still others claim that they are much more often the cause than the result of general conditions, and that not only is it useless to ignore mechanical treatment, but that the best results are obtained by such local treatment either alone or primarily.

These differences of opinion are based upon the different views which are held with regard to the dependence of one upon the other in the question of causation, and their subsequent reaction upon each other. Let me make this clearer by illustration. We find in a given case a malposition of the womb. With it is associated a debilitated state of the nervous system, which shows itself in the protean ways that are so familiar to us under the convenient but vague term of neurasthenia. There is now a problem to be solved in order to arrive at such a correct understanding of the case, that we shall be able to treat it successfully. What has been the sequence of events in this particular instance? Has the general health begun to suffer, the nutrition become impaired, the muscular system weakened, fat absorbed, and as a result the natural supports of the uterus become relaxed, and thus allowed of a version or flexion? Or, on the other hand, has the uterus become displaced, has congestion resulted, followed by a low grade of inflammation, has this begun to react upon the nervous system, and finally resulted in the more or less complete loss of tone which we find in these cases? If we claim that the first hypothesis is correct, our course is plain. Build up the nervous system by rest and tonics, make fat and blood by forced feeding, and as the body becomes better nourished, and the muscular system grows stronger, the uterus will right itself.

On the other hand, if we take the starting-point to be the displacement, our rational plan is to restore the uterus to its normal position, relieve the congestion, diminish the nervous strain, and our patient is cured.

There are to-day firm, I had almost said bigoted, adherents of both these opinions. There are men who make light of the local symptoms of their neurasthenic patients, who claim that treatment of the genital organs rarely does good, and often does harm, and who concentrate all their attention on general treatment. So, too, there are others who refer all these complex and remote symptoms to some lesion of the pelvic viscera, and are content to treat those exclusively. As a natural and almost inevitable result of circumstances, it follows that those who devote themselves largely to gynæcological practice should more often err in the last-named direction, while those who from the character of their practice or from preference see few such cases should fail to give these symptoms their proper significance.

That neither of these extreme views is correct is self-evident. It is, however, insufficient to state in a general way that the advocates of both systems go too far. Little has been done unless such practical considerations are urged and demonstrated, as will set forth in a clear light the true relations which prevail between disorders in the genital sphere, and general nervous symptoms. It will be the object of this paper, if possible, to do this.

There are several questions to be discussed. In the first place we are met at the outset by the inquiry which suggests itself always in considering this subject, is the relation between the genital organs and the whole nervous system so peculiar, that disorders of the latter more often follow disease of the former, than is the case with other organs of the body? The ancients believed it to be so when they attributed to the influence of the womb those nervous manifestations which under the name of hysteria we recognize as a common symptom of a debilitated nervous condition. We now know that hysteria is not necessarily associated with uterine disease, that in fact it occurs in men, yet its preponderance in woman is a suggestive fact. Granted that a woman's nervous system is naturally weaker than a man's, may the cause not lie in the fact that her generative organs during their period of functional activity call for a greater expenditure of nervous force even when in health than any other organ or set of organs? If this is so in health, how much more potent must be their influence when diseased. That such nervous phenomena as we generally call hysteria or the more pronounced condition of nervous debility known as neurasthenia almost exclusively occur between the years of puberty and the menopause, confirms the opinion that there is in the majority of cases a more than chance relation between the disorders of the genital functions and the general nervous disturbance.

The clinical experience of those who have had the largest opportunities for observing these cases, will, I am confident, be confirmatory of this opinion.

There are, undoubtedly, certain classes of pelvic disease which more than others predispose to coincident nervous wear and tear. The amount of pain which accompanies the lesion is one of the criteria by which we judge of the probable effect upon the nervous system. We, therefore, find certain forms of ovarian disease accompanied by dysmenorrhœa very frequently associated with nervous debility. This rule is not absolute, however, for cancer with its gnawing pain does not affect the nervous system in the way that I am describing. It saps the strength and diminishes the vital powers, but it does not make the whole nervous organization hyperæsthetic, if I may so express it. Under this latter condition the nerves respond to the slightest stimulus, even that of a lively imagination, until it needs but a suggestion of discomfort in one part of the body to start reflex symptoms of the most acute type in another. There are certain affections of the female genitals which seem particularly liable to exert this baleful effect upon the whole nervous economy. Some of these have been recognized. Emmet long ago, and many others since then have pointed out the marked results in this direction of a neglected laceration of the cervix. After the primary symptoms of leucorrhœa, backache, dyspareunia, and a feeling of weight in the pelvis have persisted for a longer or shorter time, there are very apt to follow

those phenomena which begin as nervous debility and end as nervous prostration, and these latter symptoms may soon entirely predominate over the former.

This result is more apt to follow if in addition to the cervix the perineum is also lacerated.

Chronic pelvic cellulitis, of which we are hearing less and less, inasmuch as many cases which we formerly classed under this head, are now known to be affections of the tubes and ovaries, chronic metritis, and its result areolar hyperplasia, and even chronic endometritis, all furnish their contingent of neurasthenic cases.

Less, however, has been said about displacements as a cause, and yet I conceive that they not infrequently are the starting-point of grave nervous troubles and serve to keep it up. This cannot be said of all forms of displacement alike, and some consideration of the various malpositions of the uterus with reference to their significance in this respect, is of importance here.

Backward displacements of the uterus are by all means more serious than forward ones. The retroflexions and versions occur oftener, admit of a much greater degree of malposition, and with themselves dislocate other organs more than do the anteversions and flexions. The resulting disturbance to the blood and nerve supply is much more profound. Anteversions pure and simple are in my experience rare, and do not as a rule give rise to symptoms. When, however, with the anteversion there is some descent of the uterus as a whole, a combination which is by no means rare, the resulting effect upon the whole system is much more marked. The same may be said of anteflexion, though here symptoms referable to the bladder and back, and disorders of menstruation are much more common.

Retroversion of the uterus is the most common form of malposition that we meet with, and when of the first or second degree, that is, if the version is not more than one of 90°, it may often exist without symptoms. If the organ, however, is deflected from its normal position in which the long axis of the uterine body makes a right angle with the axis of the vagina, more than 90°, we have symptoms arising from pressure on the rectum, and are apt to have dislocation of other organs. The danger of neglecting the treatment of even the slighter degrees of this displacement lies, as I conceive it, in the fact that as the axis of the uterus approaches that of the vagina, the weight of the abdominal viscera comes directly upon the fundus, and the resistance to descent of the uterus being lessened, slight degrees of prolapse are likely to follow.

Retroflexion adds to the symptoms which it causes in common with the version, those due to the uterus itself being bent, either from a loss of tone of the muscular structure of the organ, or from being drawn over by adhesions. This flexion of the uterus is an exceedingly grave symptom, and productive of the most marked general disturbance. Both for this reason, and because its treatment is often difficult, requiring even severe operative measures for its relief, it is commonly regarded as perhaps the most serious displacement in the category.

Prolapse and procidentia follow closely on retroversion in frequency, and equal if not exceed it in importance. The severer forms of falling, especially when complicated with a rolling out of the anterior and posterior vaginal walls, cystocele and rectocele, are so easily recognized by both patient and physician that their true value as a cause of local and general symptoms is accorded them. Not so, however, with the milder forms, where either from increased weight, or a slight giving way of the natural supports, the uterus sinks a little lower in the pelvis. These relatively minor grades of displacements are very often passed by unheeded, when they in reality are a cause of constant and distressing symptoms. They are not recognized for the reason that in the ordinary method of examination they cannot be detected. With the patient in the dorsal position, the uterus, unless fixed, recedes from the vulvar orifice, and the examining finger fails to detect its abnormal mobility. Even if the patient is requested to strain, the action of the abdominal muscles is not sufficient to force the uterus as low as it descends when the patient is standing, and the force of gravity is added. The proper method of examining in these cases is with the patient standing in the erect position. Then if she is requested to contract the abdominal muscles as if to relieve the bowels, the finger in the vagina will appreciate the full amount of descent.

In the same category, though of less relative importance, are the displacements of the vaginal wall which may occur without any prolapse of the uterus, though their tendency is to produce such in time. They have only recently begun to receive the attention which they deserve.

Lateral displacements are merely subvarieties and minor complications of the forward and backward malpositions which we have spoken of, and do not need any special mention.

From the foregoing it will be seen that the displacements, which most often give rise to serious symptoms and demand treatment, are of the third degree or of lesser degrees when complicated with prolapse, retroflexion especially when bound down by adhesions and prolapse; less frequently anteflexion, anteversion with prolapse, and least frequently of all simple anteversion, and retroversion of the first two degrees.

If we study this order of relative frequency closely, it will be seen that there are three conditions upon which the gravity of the symptoms depends. First, prolapse; second, adhesions; and third, flexion. I have named them in this order because it seems to me that both as regards severity of local symptoms, and secondary effect upon the whole system, especially the nerves, that is the proper order of relative frequency and importance.

I am convinced that prolapse of the uterus, especially in its minor forms, has been much neglected or underestimated as a factor in the pathological significance of uterine displacements. A large proportion of anteversions give rise to no symptoms unless complicated with prolapse; the same is true of many cases of retroversion, and the symptoms complained of in these cases are those characteristic of a descent of the womb, and are relieved by the treatment appropriate to that malposition. A slight amount of prolapse will cause more disturbance with the circulation than a very marked version, and the constant dragging and bearing down, which is the almost universal complaint, is excessively wearing upon the nerves.

The detrimental effects of the presence of adhesions are shown in two ways: first, from the impairment of the mobility of the uterus which ensues; and second,

the production of pain due primarily to the inflammation of the peritoneum, and secondarily to the implication of nerve filaments in the contracting bands of adhesions.

A bending of the uterus upon itself is of importance pathologically for several reasons. The two chief causes, however, to which its effects upon the general health are due, are the interference with the circulation in the organ itself, as a result of which alterations of tissue occur in time, and the displacement of other organs, notably the tubes and ovaries.

Having thus considered in a general way the various malpositions to which the uterus is liable, and the special circumstances connected with the different forms to which their pathological importance is due, it remains briefly to refer to their effect upon the system at large, and to insist upon the necessity of treating them.

I do not by any means claim that uterine displacements are always the primary occurrence, and that they invariably cause grave nervous symptoms. On the contrary, there is that large class of cases of displacement from loss of tone of the uterine supports, where muscular debility is the first factor, and the uterine condition is merely one mode of expression of it. But, even in these cases, the continued presence of the pelvic trouble tends to keep up the condition of nervous debility, of which it may be originally only a symptom.

Of the three principal factors in these cases of displacement to which I have referred — flexions, adhesions, and prolapse — the importance of the first two is, I think, sufficiently recognized by the profession. The *rôle* they play in inducing and keeping up a state of nervous exhaustion is well known. The difficulty here is not that the necessity of treatment is not fully appreciated, but that they rank among the affections of the genital organs which are the most obstinate to yield to the ordinary methods.

Cases of flexions with adhesions were for a long time, and still are by some authorities, considered incurable, and it is the exceedingly unsatisfactory results of the methods of treatment which have been hitherto tried in a class of cases which entails so much local suffering and exercises such a deleterious effect upon the whole nervous system which has led to such severe operative measures being proposed and tried for their relief, as laparotomy, forcibly breaking up the adhesions, and stitching the fundus to the abdominal wall.

It is, however, different with prolapse, especially in the earlier stages. The importance of this has, I am confident, been under-estimated. I claim that is the one element which makes versions, which would otherwise give rise to no symptoms of any pathological significance. The constant feeling of weight in the pelvis, to which is soon added weakness of the muscles of the back and thighs, making locomotion painful, and standing even more difficult, is generally due either to the yielding of the muscular and ligamentous supports of the uterus, or the loss of the integrity of the pelvic floor as a result of parturition.

I would, therefore, urge in all cases where the loss of nervous tone is a prominent symptom, where headache, dyspepsia, inability to walk, sleeplessness following the least excitement, loss of mental power, as shown by the inability to concentrate the mind on any subject, loss of ability to control the emotions, evinced by fits of crying, depression, or temporary exaltation of spirits, followed by a corresponding reaction, where some or all of these symptoms are found, the careful consideration of the accompanying pelvic symptoms, and, if such exist, even though to a mild degree, would recommend a vaginal examination.

If any of the various malpositions be found which have been described in this paper, the important question has to be decided whether it should be treated, and when. If the history of the case makes it clear that it is the primary factor in the case, the first step should be the attempt to cure the pelvic trouble by treatment. The only exception to this rule is in those cases where the general health is so much reduced that the strain necessary to undergo local treatment would be too great. Here attempts must first be made to so improve the nervous condition by rest, food, and tonics, that treatment may be begun. The Weir Mitchell treatment, either thoroughly carried out or modified to suit the individual case, will serve as a model. In cases of this sort, if local treatment is entirely neglected, there may be improvement up to a certain point, but beyond that it will not advance if the special treatment of the genital complication is neglected.

Where the malposition is secondary, if taken in time, local treatment may sometimes be avoided. With the improvement in the condition of the general system, the uterus may recover itself. If it has persisted for some time, however, it in turn becomes one of the causes which keep up the depreciated state of the general health, and must be rectified before perfect health is restored. In these cases of profound nervous debility, every organ and function must be interrogated, and the ability to correctly estimate the pathological significance of the various departures from the normal conditions which are found, and the choice of the order and methods of treatment, is a matter requiring extreme delicacy and skill, and upon it depends the success of the physician.

As to the methods of treatment to be pursued, it is not the purpose of this paper to go into details. A few general considerations may be urged. Malpositions uncomplicated by adhesions or by inflammatory conditions in the pelvis, especially in unmarried women, may frequently be restored to their normal position and a pessary adjusted with a minimum of nervous strain to the patient at one sitting under ether. Where there are adhesions, or even in cases where there are not, but the vagina is narrow, the abdominal walls rigid, and the bimanual method of reposition difficult or impossible, the slower method, by packing the vagina, is to be recommended.

Where the uterus, on examination in the dorsal position, seems normal, but yet the patient complains of symptoms which suggest some displacement, the examination in the erect posture for the slighter degrees of prolapse should not be neglected.

Of especial importance to my mind in this connection are slight tears of the perineum, impairing the integrity of the pelvic floor. These are often overlooked because they not infrequently occur either at the sides where they loosen the attachments of the pelvic fascia, or beneath the mucous membrane in the muscular structure of the perineal body, and the almost intact external perineum gives no evidence of the damage done. These changes, the result of parturition, are a fruitful source of prolapse of both uterus and vaginal

walls, and their repair by a plastic operation will do much toward restoring the general health.

In the obstinate cases of retroflexion, where a pessary will not hold the uterus forward, the Alexander operation of shortening the round ligaments, or one of the other more serious operations, may be considered.

HEBREW PHYSICIANS IN THE MIDDLE AGES.

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FROM recently issued publications (Münz, Hosmer) it appears that inmates of monasteries were not the only scholars that made the higher education of Greek and Arab the heritage of modern life. The work of the Jews in this direction is the more striking because of their political and social ostracism. Their personal worth, however, the value of their minds, could not be ignored by the intelligent; and in no field of thought have they won more fame, and thankful recognition among the Gentiles than in medicine. Theological views disappeared when human needs were felt. Pope and prince did not hesitate to follow the advice of Israelitish doctors. The poor were not neglected by them. They served as instructors to those about them. Both Orient and Occident honored them as men and as practitioners. Not only did these people produce an unusual proportion of good surgeons to practice current methods, but through them, at the Renaissance, medicine was revived, to become the parent of physical science in general. In the composite picture presented, we notice a few prominent traits.

Isaac Israeli (obit 950), was a renowned practitioner, and his work "De Diatetica," published among the Arabs, may claim to be of decided value even now. He lived to be 110 years of age, and when asked why he had never married, replied "I have written four books, which will preserve remembrance of me better than children."

Maimonides,[1] in his epistle to the luxurious Sultan, in Egypt, while prescribing for the body, dared to direct the mind toward a rational living.

One ambitious son of Israel, however, a famous doctor, turned Mahommedan; but this change did not bring the desired reputation in a community hostile to those of his original faith; his last days were not peaceful. Another learned one became prime minister of the Great Khan, at Bagdad, and used his power to advance all branches of knowledge; yet envy and ill-will worked his fall. The popular hate toward this race was then (1291 A. D.) the cause of death to many thousands, jealousy, as in our day, being the apparent motive. Moslem physicians generally understood more of astrology and magic then of the noble art of healing, although the Jews, also tried to guide human conduct by stellar positions.

The Hebrew court physicians among the Spanish Arabs did much to preserve and transmit to modern central and western Europe the medical lore of ancient Greece and Rome, though little actual progress in natural or morbid physiology appears to have been made and recorded by them. The contemporary Christian rulers in the peninsula, despite their catholicity, prized the wise sons of David not less than did their Moorish cousins. At the same time, the common folk, similarly to the Islamitic masses, persecuted the "peculiar people," for both religious and economic reasons. A Hebrew surgeon persuaded John II, of Portugal, to refuse aid to Columbus when he asked ships for his voyage of discovery. Cohen and Halevi are names famous for learning and virtue.

Toward the end of the 15th century, a most sad tragedy drove the Judaic people, and with them the physicians, from Spain and Portugal; so that those who, about that time needed a surgeon, were left to the care of quacks and impostors, or found themselves forced to send, at great cost, to distant lands.

Touching central Europe, it is well-known (says Livius Fürst) that, from Charlemagne to Francis First (who requested Charles the Fifth to send him an Israelitish doctor) every ruling prince had a Hebrew as personal physician. The one with Charles the Bald had such a name for magic and witchcraft, that common report credited him with having swallowed up a wagon laden with hay, together with team and driver. Although less advanced and progressive than those of Spain, yet Jewish physicians throughout Germany were fit to be called learned when compared with their Christian colleagues, who knew little of remedial science, and were sunk in ignorance and superstition.

In Ratisbon the inimical citizens complained that almost everybody allowed Israelites to attend them. In various parts of central Europe, from Königsberg (where in 1538, it was unlawful for such to practice) to Strassburg, Hebrew doctors were among those who were first excused from onerous taxes. Import duties on medical books and surgical instruments do not appear as exceptions from such franchise. Will the United States be flattered by comparison?

In Vienna they could not, at one time, be practitioners because of their inability to subscribe to the customary oath, "*de immaculata conceptione:*" in 1517, however, the emperor abrogated this rule. At different times (1373–1567), and in various places throughout Germany, city physicians were employed with definite honoraria. During the 15th century, Jewish women were successful in medicine. In 1419, one received official recognition from the government: about 1430, another was a skilful oculist. Similar instances were not rare, among the Teutons. The renowned John Reuchlin had two Hebrew scholars and physicians as friends and instructors.

In France we find a comparatively larger and more brilliant series of medical men, some of whom possessed the favor and protection of sovereigns, from Hugh Capet to Maria di Medici. Numbers of them were eminent scholars in science, and the ancient literature of physic (translating from Arabic), as well as instructors in medicine to many pupils of the Christian faith, together with those of their own racial descendance.

The Montpellier school, so flourishing in the first half of the thirteenth century, was in great part founded and sustained by them. Nevertheless, one illustrious son of Abraham, in 1288, became a victim of the *auto de fé*, and several were tortured to death on false charges of poisoning.

When, in 1453, the crescent rose above the cross in Constantinople, skill and prudence caused the Hebrew doctors to be trusted and honored by those in power. The influence thus gained was often used to lighten

[1] Dr. Münz, affirming that the industry of Maimonides, as a practitioner and writer of authority in professional matters, has not been justly shown, states his intention to publish a paper thereon.

burdens which discriminating laws put upon their co-religionists. In the latter part of the sixteenth century, the widow of a famous practitioner attended Sultan Mahomet II, sick with small-pox. It is stated that, with her medicaments, she restored him to health, and the grateful patient richly rewarded her. The record does not say that diseases were *self-limited* in those days.

In Poland, a place of refuge when the Jews were driven from Southwestern Europe, intellectual superiority and medical skill procured for them, in many instances, the favor of kings and nobles, and release from the burdens especially imposed upon their people.

It is remarkable that while in outlying territories subject to the hierarchy of Rome the Jews were generally persecuted with vigor, in Italy they lived under more satisfactory relations with the church authorities. In nearly all the larger cities they were active in scientific research, practised medicine, and stood well in the opinion of the Christian communities where they lived. From which we may learn that the laws of physiology (laws of nature, of science, of God) do not show special deference for any particular form of theology. One of these, Leo, had such a good reputation, that, in 1331, he was excused from the Venetian govermental examination usually required. A Mantuan, in 1376, was the first Israelite who printed and published Hebrew books. In his medical works we find ideas that seem quite wonderful, even in the midst of our latest discoveries. Emmanuel, a friend of Dante, like him, wrote an "Inferno," which, in spirit and humor, was equal to that now classic, and in elevation and nobleness of vigor surpassed it. He put the unskilful doctors and quacks in Plutonian regions because they did only harm to human society, and hastened the passage of credulous sick persons to the final sleep. Hippocrates was given a station among the sinners because he held his great wisdom secret, and narrow-heartedly kept his medical books from his fellow-men. In the treatment of exigent patients, Emmanuel was witty and original, often successful; but details are too long for quoting here. A Jew was among the foremost men of the celebrated Medical School of Salerno, which also was indebted to Hebrew scholars for much of the translations from Arabic into Latin there used. At the instance of Charles I, King of Naples, a Jew translated from Hippocrates a treatise on diseases of the horse. One of these doctors is praised by a Christian prince, not only for his professional skill, but because he helped the poor and needy, and was not stern in demanding payment for his services.

Amatus Lusitanus (obit 1592), had a great name as physician. He studied to know the nature or natural history of disease. At the close of a long and busy life he could say that he had never accepted rich gifts, had attended the poor without regard to pay, made no difference between Jew, Christian, or Turk; that neither family reasons, hard journeys, nor anathemas ever kept him from duty. In numerous instances, medicine seemed to be the heritage of families.

Paracelsus is mentioned as one who attempted to reform medicine, which, in his day, was grievously burdened with ignorance and fraud.

One of the recommendations of the erudite Isaac Israeli is that the practitioner should not try to do more than his own health will warrant, because duty requires that he should be well in body and mind in order to properly care for the sick under his charge. Other dicta of this master remind one of the rational practice taught by Hippocrates, Sydenham and Bigelow.

A professor at Montpellier recently wrote that, during the Middle Ages, the practice of medicine was so universally in the hands of the Jews, one might almost think it necessary to be of that race in order to have experience in the healing art. Among them the study of medicine was part of a complete education, often without intention to practice. Their wideness of thought and heartsome sympathy were more conspicuous because of the narrowness of view and fanatic selfishness characterizing the majority of physicians (monks and nuns) in European lands belonging to other cults. No creed or race was debarred from their service. It appears that the very general study of medicine by the Jews of the Middle Ages was due not merely to a desire for knowledge of the truth in nature, but also to a vivid appreciation of its value in religion or ethics, as shown in various codices and pedagogic writings: soundness of body was considered necessary to the manifestation of a virtuous soul. Maintenance of health was regarded a sacred duty by those firm in the faith. They recognized that the perfecting and ennobling of human faculties could be brought about only by the continual application of hygienic principles to the conduct of individual life. The *unpardonable* sins are those which the laws of nature fail not to punish. At the same time, the practice of physic was one of the few modes of life open to them, and the course that gave access to sources of power (kings and princes) for good or ill to their people.

While personal relations with the Jews were often maintained by high functionaries of the Romish Church, canonical censures were repeatedly issued against them; and Christians were threatened with excommunication for calling them to attend the sick, "because," says the edict, "it is better to die than owe one's life to a Jew." Although this sufficed to cause much unnecessary suffering (miscalled martyrdom) and possible death, such logic failed to convince many of those who had need of a physician: the most devout sons and officials of the Church, and zealous preachers frequently complained that the attending medical men in monasteries and convents were generally Hebrews. Sometimes, however, the law was put into effect; for example, in Sicily, during 1293, where the penalty was, for the patient, three months' imprisonment on bread and water; whereas the doctor was given twelve months, his fee going to the poor.

The generalizing of education in modern times has deprived the Jewish scholars and physician of the eminent position held during the Middle Ages. No monuments of brass or marble preserve these heroes' names; no poet sings their fame. The treasures they wrought out lie 'neath the dust of centuries on the forgotten shelves of many an ancient library.

— "Ah, Clara," said a young surgeon (after hospital hours), as he sank upon his knees, "would that I could gain possession of your heart!" — "You can, Mr. Sawbones," replied Clara, promptly but blushingly; "and without giving me ether either." — *New York Sun.*

POSTURAL TREATMENT OF CONSTIPATION.[1]

BY EDWARD T. WILLIAMS, M.D.

A RECENT paper on constipation by an eminent surgeon of this city, and its discussion before the Boston Society for Medical Improvement,[2] embolden me to speak of a source of trouble unnoticed, so far as I know, by formal writers. I allude to a faulty and unnatural posture at stool.

The act of defæcation strongly resembles the expulsive stage of labor. The main propelling force in both cases is the contraction of the diaphragm and abdominal muscles, mere uterine action and intestinal peristalsis playing a subordinate rôle in both acts when physiologically performed.

The importance of posture and other aids in bringing out this natural action of the abdominal muscles in labor is tolerably well recognized by modern writers on midwifery. One often sees women in confinement quit the bed and take up a crouching attitude on the floor, instinctively feeling that they can bear down better in this position. The pulling and pushing movements with hands and feet so universally witnessed are directed to the same end.

Sixteen years ago I had myself the fortune to hit upon a simple and effective contrivance for this purpose which has proved of vast use in my hands. A description of it may be found in the *Boston Medical and Surgical Journal* of June 11, 1874. It consists simply of a twisted sheet with the ends tied together in the form of a ring or loop, in the lower part of which the feet are placed and pushed downwards, while the upper end is pulled upwards with the hands or wrists. It calls the whole set of waist muscles into powerful action, and secures, where the way is clear, a prompt and natural delivery.[3]

But to return to constipation. I feel sure I cannot be mistaken after twenty years' practice, and, I may say, almost daily study of the subject, in thinking that a faulty posture at stool and consequent inertia of the abdominal muscles have been among the commonest causes of the disease in the patients under my care. A gentleman, having finished his breakfast and lighted his cigar, retires, with the morning paper in his hand, to a cosy and well-heated apartment, takes a comfortable seat, and between reading and smoking passively awaits the tardy operation of nature. He either takes no active part at all, or at most inflates his lungs a little and holds his breath, thereby depressing the diaphragm, but having no marked action on the other expulsive muscles — the straight and oblique abdominal, the *psoae* and *quadrati lumborum*. As a result the bowels are imperfectly emptied, a residual mass is left behind in the colon, which, accumulating day by day, must finally be evacuated by artificial means.

Put the same man into the woods, say the Adirondacks. At the call of nature he seeks the nearest thicket, and there assumes a strictly physiological attitude. He neither sits nor stands, he squats. Every muscle of the back and abdomen is brought into play, the bowel is rapidly and completely emptied; and, vacation ended, he returns to his home a new man.

Watch any of the lower animals, the dog, the cat, the pig, the ape at the menagerie, even the horse and cow when hard bound — always an approach to the same attitude. I suppose every one has noticed the same thing in young children.

I believe I need offer no apology for these observations.

We ought, then, to expect, what I have found to be the case, that the assumption of a correct posture at stool would prove a sufficient cure for what may be called passive constipation. The sitting posture should be interdicted, and a stooping one substituted. If the construction of the water-closet does not admit this it should be altered. The margins of the basin should be leaded, and wide enough to afford room for the feet on each side. Above this on hinges should be two covers, the lower one perforated, the upper not. One of the best arrangements, for men at any rate, would be to abolish the seat altogether, and have merely a stone or marble slab, with a hole in it, as is often seen in Europe, at or near the level of the floor.

For ladies the matter is less easily managed. I have often recommended the use of the chamber utensil instead of the ordinary seat. One lady of most distinguished family and position assured me that this was one of the most valuable suggestions she had ever received. I have found it equally beneficial in other cases.

I have now been using and recommending this posture treatment for twenty years. I hardly know any person of sense who ever properly tried it who did not find it of advantage. With proper diet and exercise it will surely cure the majority of cases with comparatively little aid from medicine. Still drugs and clysters are needful at times, and in certain cases must be regularly used: though I believe the greater part of those who require continuous dosing are persons too ignorant or too indifferent to try and cure themselves by natural and simple means. The abused motto, *natura duce*, too often made a mere cloak for professional ignorance, here finds a wise and wholesome application.[4]

[1] Written April 20, 1888, and read before the Massachusetts Medical Society, June 13, 1888.

[2] See Boston Med. and Surg. Journal, April 12, 1888, pp. 376-378.

[3] The description of what I call my "birth-sheet" was printed under the misleading title of "A Substitute for the Binder," a title prefixed by editorial oversight to a brief note without title. Doubtless I was to blame myself for not giving the note a title descriptive of its contents, but the the error was peculiarly unfortunate as tending to divert rather than attract attention to a contrivance which in my own experience has saved a deal of operative interference and a goodly number of human lives.

[4] Since writing the foregoing paper, in fact since the printed programmes of this meeting were issued, my attention has been called to two articles on the same subject, one by Dr. A. W. Abbott, of Minneapolis, in the *Northwestern Lancet* of March 1, 1888, the other an editorial review of Dr. Abbot's paper in the *New York Medical Record* of May 12, 1888.

I have decided, notwithstanding, to read my own paper as I wrote it, without entering into any question of priority with Dr. Abbott. While he certainly has the honor of being the first in print, I can positively prove that my practice antedates his paper by an even score of years, and has been liberally recommended to patients and physicians ever since. It was my experience of the benefits of this practice which first suggested to my mind the conception of the "birth-sheet" previously described, which I commenced using in 1872, and published in June, 1874. On May 23, 1878, I explained in full detail my notions on the posture treatment of constipation before the Roxbury Medical Improvement Society, as can be clearly substantiated by the official records, and the recollection of members present at the meeting. The present paper was inspired by the one of Dr. R. M. Hodges previously alluded to, at a time when I was as yet totally ignorant of the already published article of Dr. Abbott. Yet there can be little doubt that the posture here advocated on scientific ground is habitually used by great numbers for convenience' sake, and has been used by the majority of the race from the earliest period of its existence on earth.

— Mr. W. J. Clapp gives in the *Lancet* for July 21st, details of a case of tetanus successfully treated by him with the tincture of strophanthus, and administered in the form of tabloids containing two minims each, given every three hours. In a fortnight the man was able to walk and eat as usual, and subsequently returned to his work, quite well.

REPORT ON PHYSICAL CULTURE IN SCHOOLS.[1]

BY Z. B. ADAMS, M.D., E. H. BRADFORD, M.D., AND C. F. WITHINGTON, M.D.

THE Special Committee of the Massachusetts Medical Society appointed at the annual meeting, June 8, 1887, "to investigate the subject of Physical Culture in Schools, and to report on the same at a future meeting," beg leave to present the following report, in which they would call the attention of the Society:

(1) To the need of some method of Physical Culture, particularly for the children of our cities and larger towns:

(2) To what has already been accomplished in some quarters in the direction of supplying this need; and

(3) To a brief consideration of what seems to be practicable for schools (and particularly the public schools) to undertake for the physical training of their pupils.

I. THE NEED OF PHYSICAL CULTURE IN PUBLIC EDUCATION.

Were intellectual achievement the sole legitimate aim of education, a position which we protest against as partial and false, it would still be true that in the interest of purely mental development, physical well-being is indispensable. The brain is composed of material tissues, and its functions cannot be long or successfully maintained, unless those tissues, together with the body of which they form a part, are in a state of physiological health. Despite sporadic cases of an active mind in a feeble body, it is true that sustained and successful brain-work can be done only by a well-conditioned organism. The world is awaking to the fact that as mortification of the flesh does not conduce to moral health, neither will an overworked and ill-nourished body sustain a valid mind.

But it is not alone mental strength which is needed for successfully wrestling with the world. For the more highly educated, and still more emphatically for the children who receive their only preparation for life in the public schools, it is true that much besides what is learned from books is necessary for success in life. It is here that the current systems of education most seriously fail. They have occupied themselves solely with the mind, and have left other fields, equally or more important in their possible fruition, to lie fallow. No child will achieve his best usefulness whose moral and physical powers are left uncultivated. "Teach my boy three things," said an old-time father, "to ride a horse, to shoot a gun, and to tell the truth." Such acquirements as these made the fathers of the State, and while we can to advantage add to them in our modern education, we cannot dispense with them. Manual training has only of late begun to find a place in our school-rooms. It should be welcomed by physicians as well as by sociologists. Apart from the direct utility of sewing and cooking for girls or of the use of tools for boys, there is a physical advantage in the training of groups of muscles to coördinated action; and disciplined muscular action is itself no slight stimulus to the brain.

The time has come, in our judgment, for a further extension of this principle. Not only the brain, but the eye and hand, and not only these but the whole muscular system should receive a training, which will make the individual efficient in whatever field he elects to work.

The splendid results attained by those nations which have paid especial attention to the cultivation of the body are too well-known to require extended reference. It needs no medical eye to see in the pale skins, narrow chests, thin and nervous frames of the great mass of public-school children in our cities a sad contrast to that physical perfection which gave to ancient Greece her leadership in arms and in art. A competent authority on the subject, and an American as well, says that one can enter the public schools of New York city and easily separate the German children from the American, simply by the difference in physique, the former class having had the advantage of the training of the Turners' societies, and the latter having grown up without any physical culture whatever.

We are in danger of forgetting the great changes in the condition of American life which have taken place in the last forty or fifty years, changes which require a general re-shaping of our habits. In former years a much greater proportion of the population lived in the country; boys and girls had an abundance of out-door life. The open air was their gymnasium and the apparatus was whatever implement of labor they were required to wield. The apprentice system had not died out and the native-born population did not think it beneath them to learn trades, which were in themselves an education to body and to mind. Now it is estimated that one-fourth of all our children are living in the large cities of the country. While many of the cities are growing with marvellous rapidity, the country districts, at least throughout New England, are not holding their own. It is said that while a half century ago 85% of our male population were engaged in farming or other out-door work, not more than 40% are so engaged at the present time. Town-bred boys have no wood to chop, and except as they have access to public parks, no fields to play in. Out-of-door play for girls is quite obsolete. Brick sidewalks and brick school-yards are discouragers of running and romping, and the child of the period, especially if a girl, settles down early to the staid gait of its elders.

"The first requisite to success in life," says Herbert Spencer, "is to be a good animal. The best brain is found of little service if there be not enough vital energy to work it." Preventive medicine, public hygiene and orthopædic surgery, while they have rendered inestimable benefits to the State, have yet kept alive many of those weaklings, who under the operation of the law of the survival of the fittest, would have perished. These defective individuals, added to the general sum of the adolescent population, tend to lower the average of physical excellence, and while merciful science has saved many a life otherwise doomed, she must see to it that her kindness to the individual do not carry with it a peril to the vigor of the species. Physical culture is necessary as never before, to meet the artificial conditions of urban life, and to prevent the feeble organizations from perpetuating their own type in their descendants.

II. WHAT HAS ALREADY BEEN ACCOMPLISHED FOR THE PHYSICAL CULTURE OF THE YOUNG.

In studying how to inaugurate any needed reform it

[1] Report presented to the Massachusetts Medical Society at its annual meeting, June 13, 1888, accepted by the Society, and ordered to be presented, with its endorsement, to the Massachusetts State Board of Education.

is of value to know what results have been arrived at by others working at substantially the same problem. The success of physical training as an integral part of public education in Germany is too well known to require extended mention. We would remark, however, that it was advocated in June, 1842,[2] by Frederick William IV, and with considerable promptness carried into partial effect. In 1860 it was introduced into the elementary schools for boys. In 1862 it was made compulsory, and more recently has been introduced generally into girls' schools. It is now required of each scholar for two hours per week. The exercises are graded in difficulty according to the age of the pupils from six years upward. Berlin in 1885 contained ninety-eight turnhallen, used for educational purposes. Frankfort expends yearly $27,000 for the physical culture of her 18,000 public school children, and Vienna for her schools about $35,000, or one-twenty-ninth as much as her total educational outlay.

The German Turners' Association, which have been so closely identified with the cause of physical culture in the mother country, are continuing their good work in the land of their adoption. Last year the North American Turnerbund had under gymnastic training nearly 19,000 boys and girls, the children of its members.

In the observation which your committee has been able to make of these gymnastic classes, they have been impressed with the usefulness of the work done. The drill is for the most part conducted in the turnhallen, of which there are in the country 144, costing some $3,000,000, belonging to the local societies, and the children have the opportunity of using such of the "heavier" apparatus as is adapted to their years; as, for instance, rings, ladders, and, to a moderate extent, high bars. But the latter appliances your committee does not consider essential to the training of young children, when the free movements and light gymnastics are so easily attainable. The German system has brought into our land an impulse in the right direction, physical results which form an impressive object-lesson in comparison with our present generally do-nothing policy, and the Turners' Normal School for training gymnastic teachers may possibly be made use of in securing instruction to our public-school teachers for the work which should be made a part of their pedagogic duties.

But the Germans are by no means the only ones who are alive to the needs of bodily training. The physical renaissance has begun in good earnest in most of our American colleges, while athletic clubs and gymnasia include many of the young men in the well-to-do classes of our city populations. But the movement which has well begun at the top of our educational system, needs to be extended downwards through all its ramifications. The great mass of children never reach the upper grades even of the public schools. If such children are to receive any physical culture whatever, it must be in the grammar, the intermediate, and even the primary schools.

In the "preliminary" schools, those having pupils from sixteen to seventeen years of age and under, is the present need of pioneer work. And here, we are happy to note, already pioneers are not wanting. As might be expected, the private schools and endowed academies have been among the first to secure the requisite funds for such instruction. The report of the New Hampshire State Board of Health for 1887 contains an article by E. H. Fallows, reviewing the present status of physical education in public and preparatory schools. It is, unfortunately, incomplete in its data, but, so far as it goes, its information is valuable and interesting. In 60 out of 118 schools of this character which have answered the queries of this investigator, a gymnastic drill of some sort or other is required, but in half of them it is pursued at such long and irregular intervals as to be of little use. Among the 118 schools there are 27 gymnasia, and 28 rooms more or less extensively fitted up with apparatus. The total outlay for gymnasia and rooms was about $115,000, and $65,000 of this amount is represented in the gymnasia of three academies, namely, Phillips (Andover), Williston and Phillips (Exeter). These 118 schools are, of course, but a small part of all the schools of their kind, though they include many of the best known public and private institutions in the country, and doubtless represent an amount of attention to physical culture much greater than would be found in all the schools taken together.

We know of some schools not included in this list which are doing excellent work, and, on the other hand, some of the gymnasia reported in this list we have reason to know are rendered worthless or even worse to the pupils through lack of any skilled supervision in their use. The amount laid out for a gymnastic "plant" is no criterion of the usefulness of the work accomplished, a simple room with a very slight apparatus, or even none at all, having, under intelligent direction, greater capacity for good than the most elaborate appliances without it.

In only five of the schools referred to are physical examinations and anthropometric measurements of the scholars made the basis of the training. These are the Adelphi Academy, of Brooklyn, N. Y., the Preparatory School, at Princeton, N. J., the Wesleyan Academy, at Wilbraham, Mass., the Hill School, at Pottsdam, Penn., and the Phillips Exeter Academy, at Exeter, N. H. Each student is examined physically and measured once a year, the measurements being in accordance with the system used by Dr. Sargent in the Hemenway Gymnasium at Harvard, and Dr. Hitchcock, at the Pratt Gymnasium, Amherst, and adopted by the Association for the Advancement of Physical Education. A handbook of developing exercises is made out in accordance with the needs of the individual and given to each student. It contains, also, special instruction regarding air, hygiene, food, bathing, clothing and sleep.

It may be said that the responsibility of a boarding-school for the physical welfare of the pupils is greater than that of a day-school in which the pupils dwell under the parents' roof. But obviously the parent's responsibility is limited by his ability, and if the circumstances of his life in a narrow city quarter render it impossible for him to give his child any chance for a sound physical development, the municipality must look to remedying the defect or it will not be remedied. Certainly as a measure of public policy the State can as ill afford to neglect the bodies of her future citizens as their minds. It is, of course, not to be expected that the public schools can so far individualize its work in this direction as the private schools. In

[2] For this and other facts regarding the school gymnastics of Germany, see Physical Training in American Colleges and Universities, by E. M. Hartwell, Ph.D., M.D., of Johns Hopkins University. Circulars of Information of the Bureau of Education. No. 5, 1885.

the former the pupils must be exercised in classes; and anthropometric measurements, if made, will be more useful in showing the adaptation of the system to the needs of the average pupil than in affording a treatment for the special abnormalities or deficiencies of the individual.

In 28 of the 118 schools above referred to, a military drill is used. In 15 this is accompanied by light gymnastic work, but in the other 13, as the report says, with perhaps unnecessary severity, "nothing is done for the physical welfare of the pupils." A much larger number of schools in reality are depending upon military drill as the only means for physical culture of their pupils. It is probably better than nothing for this purpose, and if practiced without guns, or with a wooden gun of weight adapted to the strength of the pupils, would be much more useful than it generally is at present.[3] The system, as it exists, however, in many of our large towns, we consider productive of little good for the outlay involved, which is considerable, both to the public treasury for the guns, and to the private pocket for the uniforms, while it is applicable to only a small portion of the children needing physical training.

A word in passing regarding the results attained by systematic training in calisthenics and light gymnastics in a private academy, the Adelphi, of Brooklyn. The director of physical culture, Dr. W. G. Anderson, in his report for 1886 gives the measurements, height, weight, etc., of his pupils, and, for comparison, those of average Boston boys and girls in the public schools, taken from Dr. Bowditch's report, and also the measurements of selected boys from the Boston Latin School and the Massachusetts Institute of Technology. The tables show a considerable difference in favor of the former, which, while it may be in part due to more favorable social circumstances, is yet, in the opinion of the director, chiefly due to the daily drill in light gymnastics which is carried on with much thoroughness.

But while endowed schools are often in position to afford gymnastic outfit which is not attainable for public schools, your committee are glad to observe that the latter class have already, in several instances, demonstrated their capacity for doing this work, which must be done for the great mass of our city children, if at all, by the public schools.

Kansas City has taken a most advanced position in the line of public physical training. The work has been, since its inception in October, 1885, under the charge of Mr. Carl Betz, who has published a series of manuals of free gymnastics, of gymnastic tactics, and of light gymnastics (with poles, dumb-bells, rings, wands and clubs), with which he has kindly furnished your committee. The method is based on the German system (Turnkunst), with special adaptation for use in the common-school system of America. This system was, in September, 1886, adopted by Chicago for her public schools. The work there is under the direction of Mr. Henry Suder. Eight teachers are employed, who visit each grammar grade twice a week. On the other days the regular teachers give instruction in the exercises. A pamphlet containing lessons for each week of the school year has been printed for the use of the teachers. The same system has also been introduced into the public schools of Yankton, Dakota, Slater, Mo., and Davenport, Iowa, while we learn that a beginning was also made last year in Louisville, Cleveland, Omaha and Denver.

Mr. Betz's report on this method of his work in Kansas City after it had been fifteen months in successful operation, is as follows:

"On every Saturday the director of physical training drills the principals of the different ward schools. These in turn drill their assistants, the regular teachers, on every Monday. The assistants take up the new drill for the week on every Tuesday. The drill is obligatory, and is taken as any of the other studies. At 10 o'clock A.M. all principals strike a gong, and at this signal all teachers take up the drill at once (daily). Thus at the same time all school-children throughout the city have the same exercise. Each teacher is furnished with a manual of instruction, which clearly marks the work to be accomplished. The scholars, of course, do not leave the school-room. The assistant teachers are required to make a daily report of the work, and at the end of each school week hand them to their respective principals. The principals make a monthly report to the director, who reports on the entire work to the board. As yet we have only free gymnastics, but as soon as possible dumb-bells, wands, poles, rings and clubs will follow. Then gymnastic games and popular gymnastics will be taken up, and lastly heavy gymnastics on apparatus."

While the western cities as above mentioned have, perhaps through the prominence of the German element in their population, been the first to provide systematic physical training for the public schools, your committee recognize with satisfaction the work which is being quietly done in isolated instances by public school teachers nearer home. The school committee of Boston have for many years past in their schedule of studies for grammar and primary schools, appropriated ten minutes a day for "physical exercise," but without any definite instruction as to how that exercise shall be taken. Deprived of any active interest or encouragement from the authorities, the work cannot be said to have amounted to much in the schools at large, but in a few instances, where teachers themselves have been interested in the subject, the permissive attitude of the authorities has been made use of to good purpose.

Scholars and teachers have, in some instances, by their own contributions, purchased light apparatus, such as dumb-bells, wands and rings (for the city has never made any outlay for such purposes), and the apparatus has been virtually presented to the city by these enthusiastic workers for the benefit of future users.

With no intention of reflecting upon the work done elsewhere, we wish to speak with special approval of the exercises as conducted at the Prince School in Boston, the Dillaway School in Roxbury, and the Chapman School in East Boston. The plan pursued differs in each of these schools, being in each case the product of the intelligence of some one enthusiastic teacher, working upon the problem as it presented itself to his or her mind. In one of these schools the drill now in vogue was planned by Miss Allen, at that time a teacher in the school, and now in charge of the successful gymnasium for women in Boston. The en-

[3] In the Berkeley School, in New York, where the military drill exists at its best, the "Martini tactics" are employed, thereby avoiding the unphysiological and largely one-sided manœuvres of the common, or Upton's tactics, and the guns for boys from fifteen to eighteen years weigh not exceeding four and one-half pounds; for ages under fifteen from two to three pounds.

thusiasm aroused by an earnest teacher in a school is most remarkable, and outlasts the personal presence of its inspirer. In all the schools referred to, the work is heartily sustained by the teachers as a body, who, so far as is known, are unanimous in their praise of the good results obtained. Inquiry shows that where thus practised, it is popular with scholars and parents alike. Of course, in schools where there happens to be no teacher who takes much interest in the subject, there being no general and uniform plan prescribed by the central authority, the pupils receive no physical culture worth speaking of. In saying that the city of Boston has expended no money for apparatus for Grammar schools, we do not, of course, forget that it has laid out some $1,500, chiefly upon heavy apparatus for a gymnasium in the English High School building, an expenditure rendered nugatory by the lack of an instructor in the safe and proper use of the apparatus, nor that it has spent for guns for the use of the High School boys a sum much larger than would be needed to supply enough light apparatus for all the school-children of both sexes.

III. WHAT IS FEASIBLE IN A SYSTEM OF PUBLIC INSTRUCTION.

It is to be borne in mind first and always that what is aimed at by physical education is not the production of athletes, but such a development and training of the body as shall make it a healthy organism, able to accomplish all that may be reasonably required of it.

Most of our modern school-houses in the large cities and towns, have a general "hall" in which the seats are movable, and which can be cleared so as to give room for the requisite manœuvres. Some of the buildings have specially designed drill-halls. These rooms are large enough for classes of twenty to fifty to march, and to go through free exercises and light gymnastics without collision. For a very small sum, a few sorts of apparatus could be provided, in quantity sufficient for the use of one class at a time, and capable, of course, of being consecutively used by many different pupils daily. The music, which is so important a factor in regulating the rhythm of concerted movements, can be readily supplied by the piano, which every city school possesses.

As to the particular system of exercises to be followed, we need not go into detail. Whether the German or the Swedish method is to be preferred, is perhaps a matter for further investigation. But the system must be one that is simple, and not dependent on expensive appliances. It must be interesting. It must call for alertness of attention and promptness to obey command. It must involve movements in unison with other persons, both stationary and in marching. It must combine these good points of the military drill with bilateral and free, instead of unilateral and cramped movements. It must be equally available for both sexes, and with modifications for all ages.

The matter of instruction in physical culture is one of great importance, and this will require the employment of persons who are qualified by study and experience to adapt the work to the needs of the pupils. But there is no reason why the regular teachers in the school cannot, after being instructed in the principles and practice of the science, carry on the work of their own classes under the oversight of a general supervisor of physical culture, in much the same way that some of the teaching of music in our schools is now carried on. This will make the expense of the movement, after the first, comparatively light. We understand even, that the cost of establishing the system in Kansas City was only $1,300 a year and in Cleveland $1,600.

In conclusion, we beg leave to mention that action looking towards supplying the needs above referred to, has already been taken by three of the district societies represented in this parent organization; namely, the Suffolk, the Middlesex, the South, and the Norfolk District Societies, by the appointment in each case of a committee on the subject. That the American Association for the Advancement of Physical Education, at its annual meeting, held at Brooklyn in November last, unanimously adopted resolutions as follows:

Whereas, A rational, harmonious system of education affords the best and surest guaranty for the welfare and stability of a republic;

Whereas, The present system takes into consideration the training of the mind only, almost totally neglecting that of the body;

Whereas, It is now universally conceded that physical training is a most essential factor in the education of the child with reference to his intellectual, moral and physical nature; and

Whereas, Physical training has been introduced into a great many schools of our country, and wherever introduced has given the utmost satisfaction; be it

Resolved, That the Association for the Advancement of Physical Culture, recommend to all the Boards of Education in this country, to embody Physical Culture in the course of study of the schools under control.

We recommend that this Society, approving the spirit of the above resolutions, present them with the foregoing report, to the Massachusetts State Board of Education, and respectfully, but earnestly urge upon that body such action as will bring this important subject to the favorable attention of local schoolboards in the towns and cities of the Commonwealth.

Reports of Societies.

CONGRESS FOR THE STUDY OF TUBERCULOSIS.

HELD AT PARIS, FRANCE, JULY 25–31, 1888.

THE first session of this important gathering whose recent organization, with Chauveau for President, Verneuil and Villemin for Vice Presidents, is one of the indices of the progress of the age in experimental pathology, was held in the amphitheatre of the *École de Médicine*, Paris, July 25th to the 31st ult. There was a fitness in the election to the highest office in this Congress, of two men who have done so much to advance our knowledge of the true nature of tuberculosis; Villemin, who may be said to have been the pioneer in researches of this kind, having been the first to prove the infectiousness of tubercle; and Chauveau who was the first to confirm Villemin's discovery, to demonstrate the transmission of tubercle by the digestive passages, and show the difference which exist between true and false tubercle.

The work of the first day consisted in the opening address by Chauveau, in which he gave a history of the recent researches which have led to the present doctrine of the infectiousness and microbic nature of tubercle. The identity of human and bovine tuberculosis, and that of other animal species is now every-

where admitted, and the notion, now proved true by innumerable experiments of the transmissibility of this disease from one species to another, has been fruitful in practical consequences. It is on this account that veterinaries and physicians are forming associations to find out what measures may be adopted to preserve society from this dire scourge.

M. Cornil, whose labors in pathological histology are so well-known, read a paper

ON THE TRANSMISSION OF TUBERCULOUS INFECTION BY THE MUCOUS MEMBRANES.

In order that the tubercle bacilli may penetrate the tissues by the mucous surfaces, it is not necessary that the latter should be the seat of lesions, excoriations, or fissures. Chauveau, Villemin and Bollinger had determined tuberculous intestinal lesions in animals which had ingested milk containing bacilli, and even the cultures of these bacilli. Tappenier, Schottelin and Theon have also caused the production of tubercles in the lungs, by making animals inhale liquids holding tuberculous matters in suspension. Cornil has witnessed the development of tubercles in the uteri of hares, in which he had introduced a few drops of the culture of tubercle bacilli. These were visible after twelve days, and after thirty-two days the lesions had spread to the neighboring tissues. This inoculation was produced without the least abrasion of the epithelial covering, which often remained intact, despite the continuous development of tubercle granula.

Cornil has seen tuberculosis in the human female localized in the cervix uteri, with the lesions of chronic catarrh, and tubercle granules with giant cells below the intact epithelium.

M. Nocard, of Alfort, read a paper on

THE DANGERS ARISING FROM THE USE OF MEAT AND MILK FROM TUBERCULOUS ANIMALS.

There is no doubt as to the possible contamination by bacilli of milk. As a certain percentage of milch cows are tuberculous, it is expected always to boil before using it, the milk served in cities. The sale of milk from cows known to be tuberculous, should be absolutely interdicted.

The same may be said of meat, though the juice of flesh of tuberculous animals, is rarely capable of determining tuberculosis. Out of forty guinea pigs which Nocard had inoculated with one cubic centremetre of the juice of meat from tuberculous cows, only one became tuberculous (succumbing fifty-seven days after the injection). It seems, then, that in some rare cases tuberculosis is a disease *totius substantiæ*, but this generalization of the malady is but transient, the blood and muscular juice very rapidly ceasing to be virulent. Experiment on cats (an animal known to be susceptible to tuberculosis) which were made to ingest tuberculous meat, and not one of which became tuberculous, have shown the comparatively little danger there is from this source. Cooking, moreover, of course renders such meat much less virulent.

The greater part of the following day (July 26th), was devoted to the discussion of the paper of M. Nocard. During this discussion many important facts were brought out. Baillet, of Bordeaux, thought that the meat of tuberculous animals played but a trifling rôle in the transmission of tuberculosis to man: thus, at the slaughter-houses of Bordeaux, out of 22,000 head of cattle only 40 were found which were tuberculous; by the side of this small number of sick animals, the official statistics give 1,000 phthisical persons to a population of 250,000. It would seem from this that the influence of diseased meat on the propagation of tuberculosis in the human race plays a decidedly secondary rôle. M. Spellmann, of Nancy, said that tuberculosis was very frequent in the stables of Hautes-Vosges, the mortality of cows from phthisis being thirty to forty per cent. The meat of these animals, bought at a low price and offered for sale in the neighboring towns, constitutes a permanent danger of infection.

Guiraud, of Montanban, stated that at Montanban it had been found that there was one phthisical animal to every 245 head of cattle; while Villain, of Paris, said that in the metropolis of France the proportion of phthisical animals is 6 per 1,000, at least, for the abattoirs of Villette and of Grenelle. Thomassen, of Utrecht, (Holland), gave some statistics as to the prevalence of tuberculosis among cattle in Holland; this is one-half per cent. With respect to swine, the percentage is somewhat higher. Liegen, of Luxemburg, had succeeded in tuberculizing four hogs by giving them meat to eat from a tuberculous cow. Robinson, of Grenock, Scotland, spoke in favor of a total interdiction of tuberculous meat. Guinard, of Dijon, alluded in severe terms of condemnation to a custom prevalent in some localities among anæmic patients, of resorting to the abattoirs to follow out a line of treatment which consists in drinking the blood of an animal just killed.

The Congress voted a resolution condemnatory of the use of all meats from tuberculous animals and recommending the seizure and destruction of such animals, but a principle of indemnity to the owners was also recommended.

At the evening session, July 27th, M. De Brun, of Beirut, gave an address on

PULMONARY TUBERCULOSIS IN SYRIA.

Formerly phthisis was rare in Beirut when malaria was rife. Latterly, the marshes have been drained and rendered salubrious, the land cleared and cultivated; the result has been a comparative disappearance of the malaria, but at the same time phthisis has appeared and is now making ravages among the population. The often alleged antagonism between tuberculosis and malaria thus seems to find exemplification. Observations made in other parts of the East and in Egypt, agree perfectly with the facts noted by Dr. De Brun in Beirut. The climate of Syria, on the whole, seems particularly favorable to the development of phthisis, which prevails in an especially rapid form wherever malaria has not already had the ascendency.

MM. Chautemesse and Widal, of Paris, made a communication on

THE PERSISTENCE OF THE GERMS OF TUBERCULOSIS IN RIVER WATER.

The results of an elaborate series of experiments were these: that the germs of tuberculosis remain alive for fifty days in Seine water sterilized and kept at a temperature between 8° and 12° C., and seventy days in Seine water kept at 15° to 18° C. This is one aspect of the question; another series of experiments show that they do not preserve their virulence or, if at all, to a very feeble degree, the result of inoculation of this water in animals being *nil*.

On the other hand, Galtur and Cedeac have been more successful with their inoculations of tuberculous matter kept in standing and in running water. They placed fragments of tubercle in water that was incessantly renewed, and other fragments in standing water, then cultures were attempted with these liquids. The running water gave positive results from inoculations a month and a half after the beginning of the experiment, while the stagnant water was inoculated with success one hundred and twenty days afterwards.

M. ARLOING made a report

ON THE LOCAL AND GENERAL MEANS CAPABLE OF ARRESTING THE EXTENSION OF EXPERIMENTAL TUBERCULOSIS.

He first endeavored to arrest the march of tuberculosis in the same way as some have proposed to stay the progress of syphilis, by the extirpation of the local lesion and the neighboring glands. This is an experiment which is quite easy of execution in guinea pigs, where the inoculation is made in the mammary gland. All the animals that were the subjects of this early extirpation of lesion and glands were found, on killing them after a certain number of weeks, to be tuberculized to the same degree as an equal number of animals, which were inoculated at the same time, but without subsequent extirpation of the primary centres of infection. In a second series of experiments he practised the excision at the point of inoculation on the sixth day, when there was no swelling to indicate the success of the inoculation, but the tuberculosis none the less pursued its course and became general. He also tried the inoculation of what he supposed might be *attenuated virus*, that is, scrofulous matter; but "alongside of a positive scrofulous inoculation," he found that he could succeed perfectly with "an inoculation of true tuberculous virus, capable of producing the disorders of tuberculosis." Cornil and Babes had previously published results of this kind. Finally, thinking that the action of certain antagonistic microbes might neutralize the morbid effects of the tuberculous virus, he attempted in guinea pigs the inoculation of typhoid fever virus, but found "that the animals the most saturated with typhoid virus were still perfectly susceptible of contracting tuberculosis," and were in no degree exempt by being victims of another infection.

THE BACTERIAL ASSOCIATIONS OF THE TUBERCLE BACILLUS.

M. BABES, of Bucharest, read a paper with the above title. In certain diseases, and especially in localized affections, such as tuberculous arthritis or osteitis, there exists an intimate association between the specific microbes of tuberculous and other microbes. The tuberculous lesions open the way for other bacteria which remain distinct from Koch's bacillus or form with it special products. In these cases this composite microbe is found in more or less intimate relation to the tuberculous products. These foreign microbes are often instrumental in awaking to activity a lateral tuberculosis.

M. DURET, of Lille, spoke of

GLANDULAR TUBERCULOSIS.

Tuberculosis of the glands comprehends three clinical forms, each demanding different treatment: (1) The fibro-caseous form; (2) the caseo-tuberculous form; (3) the ulcerative or fistulous form.

In the fibrous form, the only rational method is extirpation. The second form demands igni-puncture or crucial cauterizations. The third form is best treated by the thermo-cautery, which should be pressed down to the bottom of the suppurating cavities, with thorough destruction of the fistulous tracts.

ON PSEUDO-TUBERCULOSIS IN MEN AND ANIMALS,

This was the subject of a communication by MM. CORNIL and TOUPET. The pseudo-tubercle may be anatomically undistinguishable from the true tubercle, and may contain giant cells, but it is free from the bacilli of Koch, and does not produce tuberculosis in animals.

M. HUREAN, of Villeneuve, spoke of the

USE OF RAW MEAT,

but in condemnation of this kind of aliment.

M. REDARD, of Paris, spoke of

SURGICAL INTERVENTION IN TUBERCULOUS OSTEO-ARTHRITIS OF THE TIBIO-TARSAL JOINTS AND OF THE FEET IN CHILDREN.

These can often be cured by free opening of the joints, followed by curetting or scraping, and cauterization with the thermo-cautery. The tuberculous foci must be carefully disinfected before and after the operation; there must be thorough cauterization of all the tuberculous *foyers* and fistulæ, good drainage, prolonged antiseptic baths, and immobilization by plaster or silicate splints. The results of such operative surgical interference have been almost invariably good.

The third day was largely taken up by a discussion of the question of

THE HUMAN RACES, THE ANIMAL SPECIES, AND ORGANIC ENVIRONMENTS, CONSIDERED FROM THE POINT OF VIEW OF THEIR APTITUDE FOR TUBERCULOSIS.

The subjects of

HEREDITY OF TUBERCULOSIS IN ANIMALS

and of

TUBERCULOUS CIRRHOSIS

were taken up in their order.

At the evening session there was an interesting discussion on the third question:

THE WAYS OF INTRODUCTION AND PROPAGATION OF THE TUBERCULOUS VIRUS IN THE ECONOMY; PROPHYLACTIC MEASURES.

Tuberculosis is rarely transmitted by subcutaneous inoculation. A dissection wound has rarely, if ever, caused tuberculosis, and the same may be said of wounds received at the autopsies of phthisical persons. There may be a painful tumefaction at the point of the lesion, followed by abscess, but the local tuberculosis gets well without becoming generalized. There, however, are exceptions to this rule, and instances were cited where generalized infection and death have followed a wound received at the autopsy of a tuberculous person. Some interesting facts were given to show the resistance that certain fowls (as hens, pheasants) show to the reception of tuberculosis by ingestion of tuberculous matter, as the sputa of phthisical patients. Some of these fowls, which had

been fed for more than a year on phthisical sputa mixed with bread-crumbs, meal, etc., were shown to the Congress. They seemed to be perfectly healthy, and, on being killed, every one of them was found exempt from tuberculosis. The fowl is, however, not absolutely refractory to tuberculosis, as this disease has been known to prevail epidemically among hens.

MM. Strauss and Wurtz presented a valuable communication:

ON THE ACTION OF GASTRIC JUICE ON THE BACILLI OF TUBERCULOSIS.

It has been experimentally proved that the gastric juice has little power in destroying tubercle-bacilli, and the experiments of Chauveau, Gerlach, Klebs, Toussaint, etc., have shown that tuberculosis may be engendered by the ingestion of tuberculous products. If it were otherwise, there would, of course, be immunity from danger in eating tuberculous meat. Gastric juice *in vitro* only imperfectly destroys the spores of the bacilli, and its effect is very much lessened when dilated by food and drink.

Many other subjects were introduced and discussed during this long session, which lasted four days: such as "The Disinfection of Sputa" (regarded as very important by some of the speakers, patients being made to expectorate into strong sublimate solutions); "The Hygiene of Infants of Tuberculous Patients" (goat's milk is preferable to cow's, if for no other reason than that the goat is never tuberculous); "The Surgical Treatment of Certain Tuberculous Affections" (by curetting, the injection of iodoform in ether, etc.); "The Early Diagnosis of Tuberculosis in the Human Subject" (by inoculation of animals with suspected products, etc.).

The Congress adjourned, to meet two years hence under the presidency of M. Villemin.

Recent Literature.

Physical Development; or, the Laws Governing the Human System. By Nathan Allen, M.D., LL.D., member of the American Medical Association, etc. Boston: Lee & Shepard. New York: Charles T. Dillingham. 1888.

This volume of some 350 pages represents a considerable number of the previously published brochures of Dr. Allen, some of which the author tells us in his preface are out of print while the demand for them still continues. He has, therefore, in part rewritten them and added some new papers, introduced only the better part of some long articles, and so has virtually made a new book. Among the subjects treated are Physical Education in Amherst College. Remarks on Early Education and the Education of Girls. The Law of Longevity. Duties of Medical Men. Sanitary Science. Prevention of Crime. Changes in New England Population. Hereditary Influences. Prevention of Insanity. The Law of Human Increase. Heredity, a Source of Pauperism. Physical Degeneracy. College Sports. One of the longest chapters is the closing one, on the Normal Standard for Motherhood, in which the abnormalities connected with pregnancy, parturition, lactation and offspring are treated at some length, with suggestions of value to the medical as well as to the non-professional public, to which this book as a whole is apparently chiefly addressed.

THE BOSTON

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GEGENBAUER ON CÆNOGENESIS.

A recent address by this distinguished anatomist calls our attention to a less pleasant aspect of the science of the day than that usually presented in the congratulatory speeches of anniversary orators. Together with the wonderful progress of the physical sciences, there has appeared, also, a vast amount of what we must call cheap, or rather, spurious science. Various causes combined to bring this about. Within the last thirty years the number of men devoted to science (not to count women and children) has increased almost beyond computation, and, inevitably, the quality has fallen far behind the quantity. The number of notable leaders in science, of men of absolutely first-class attainments and of universal reputation, has shown no great increase. To compare the followers of science to an army, we may say that within the last generation we have gained few more generals, but that trained soldiers, both officers and privates, have multiplied, and camp followers and "bummers" increased by geometrical progression. Among these last we include men of little general education, of no philosophical training, and, unfortunately, now and then, of no principle, who sometimes ignorantly, sometimes recklessly, teach as certain what is doubtful and as fact what is theory, or it may be guess-work. The fact that many of the consequences of the evolutionary hypothesis are or appear subversive of the established order alike in religion and society, make the doctrine more attractive to minds of a certain class. A natural result of this state of affairs is the prevalence of the most vague terms. What, for instance, is less definite than the term evolution itself, as used in popular science? To some it is synonymous with Darwinism, to others to progress by sudden transformations; to some with one system, to others with another; and although the systems agree in admitting change, they differ radically in the *modus operandi* they imply, and are quite impossible to reconcile one with another. We find, every day, in the writings of those of whom better should be expected,

the statement that such and such appearances are explained by evolution, without a hint as to the system the author believes in. As an instance of how diverse views are held on minor points, let us take the history of the mammalia. Many, perhaps most, believe that the higher orders come from the marsupials; Albrecht maintains that the promammalia were nearly allied to the cetacea, and Mivart suggests a double origin. Now, when we are told that some anomaly in the human body is easily explained by a glance at its ancestry, we certainly should be told also whether we are to look to the whales or to the kangaroos, to both or to neither.

Great honor is due to some of the leading anatomists of Germany for their courage in standing firm for true science in the place of guess-work. Virchow, Kölliker, Gegenbauer, and others are of this class. We have already alluded to the first two, and now we wish to call attention to the address of the last named at the recent meeting of the Anatomische Gesellschaft at Würzburg.

As is well known, one of the most striking generalizations that has been made on the basis of evolution is that in the development of the individual (ontogenesis) there are seen as transitory states what are permanent conditions in lower forms, and that thus, in ontogenesis, we have a recapitulation of the history of the development of the species (phylogenesis). The central idea of this hypothesis has met with much favor, and it needed no prophet to foretell that so attractive and so vague a theory would be greatly abused. Professor Gegenbauer points out that in *ontogenesis*, besides the transitory appearances of ancestral, or, presumably, ancestral forms (palingenesis), we must not overlook the appearance of others that can bear no such interpretation (cænogenesis). This, of course, is no new discovery, but, from the way the matter is sometimes treated, one would imagine that the stages of development of the embryo each and all represent in regular order the ancestry of the species. It is against this crude and incorrect teaching that Gegenbauer protests. We know, for instance, that in the embryo the cavity of the mouth is for a long time separated from that of the digestive canal, but there is no animal in which this is the permanent condition. There is no ancestral form with a neuro-enteric canal connecting the central nervous system and the intestinal tract.

Again, there are discrepancies in the order of appearance of structures. Thus, in the animal series, teeth are far older organs than lungs, but in the embryo we see the beginning of the lungs before that of the teeth. Many of these cænogenetic structures are distinctly teleological for the nourishment or protection of the individual embryo, as, for example, the amnion. Gegenbauer insists that it is most important for the proper study of the questions at issue to recognize distinctly which structures have any phylogenetic significance, and which have none. Nothing but error and confusion can result from regarding everything indiscriminately as representing earlier forms. If any of our readers have thought our remarks too severe, let them ponder the words of Gegenbauer himself: "As these cænogenetic conditions do not exist in adult organisms, they are assumed to exist in them, and so one goes on to construct fictitious conditions — nay, more, entirely fictitious organisms."

Having thus evolved, let us say, for example, a sham ancestor of a camel from one's inner consciousness, one compares it with a true camel, and draws conclusions from the points of resemblance or difference between the two species, one of which is wholly imaginary. One more quotation from Gegenbauer: "The uncritical use of the results of ontogenesis leaves the solid ground of experience and falls into baseless speculation. Pictures of the imagination take the place of real objects, and thus research is drawn aside from the only path by which the knowledge of the truth, and, consequently, lasting results can be reached." These are both bold and needed words, for which the great anatomist deserves the thanks of lovers of science. At the end of the address, Professor His expressed his gratification at what he had heard. He declared that it was disturbing to every branch of science to have its results drawn to the service of an engrossing theory before these results are yet firmly established. "Let research," said he, in conclusion, "go undisturbed on its way, and then no one need be anxious as to the final application of its results."

SACCHARINE CONSIDERED AS AN ANTISEPTIC OF THE DIGESTIVE PASSAGES.

ACCORDING to Constantine Paul,[1] saccharine is an excellent antiseptic for the digestive passages, not being toxic, and having an agreeable odor and savor.

In doses which do not exceed three or four grains, it causes no disturbance of nutrition; urea, phosphoric acid, the urinary salts, still continue normal in quantity. In Dr. Paul's experience with saccharine in diabetes it has seldom troubled the digestion, and he has seen patients who have taken it for more than five months without any evil results whatever. In other cases, however, it has seemed to arrest the digestive fermentations, causing pain in the stomach, diarrhœa, etc.

Dr. Paul insists especially on the antiseptic properties of saccharine. One part to two hundred prevents the ammoniacal fermentation of urine and arrests the development of the *bacterium terme* $\frac{1}{300}$; that of *staphylococcus pyogenes*, $\frac{1}{300}$, perceptibly antagonizes the growth of the streptococcus of puerperal fever.

Saccharine is, therefore, an excellent dentifrice or antiseptic of the mouth. A six per cent. alkaline solution is prepared: of this a teaspoonful is put in half a teacupful of water, which may be aromatized. You thus have an admirable antiseptic mouth-wash. A solution of this kind would be useful for washing out

[1] Acad. de Med., July 10, 1888.

the stomach in putrid dyspepsia and gastriectasis, or as a vesical injection in cystitis with ammoniacal urine.

According to a Paris letter in the *Therapeutic Gazette*, the use of saccharine has been prohibited in all substances intended for food, both in England and in France. It has been, so far, chiefly employed for adulterating purposes, champagne wines of German make, syrups, chocolates, etc., having been seized in which sugar was partly replaced by glucose seasoned with the new sweetening principle. The authorities have wisely decided that while saccharine may be very good for diabetics, or as an antiseptic medicament, its use in common articles of food is a rank adulteration that should not be tolerated. Its place is on the pharmacist's shelf, to be prescribed by the physician, and not on the breakfast-table.

MEDICAL NOTES.

— In view of a late unfortunate error whereby a physician called to see a woman ill in a police station, failed to recognize symptoms of narcotic poisoning and treated the case as one of alcoholic intoxication, with the result of the patient's death, a daily paper makes the suggestion that in every case of arrest for supposed drunkenness, an emetic be at once administered by the police authorities as soon as the patient is brought in. This addition of medical attendance to already multiform duties which so severely tax the capacities of many members of the force, seems hardly to promise success, though so far as the drunkard is concerned, such a course might conduce to temperance through the addition of one more to the hard things in the way of the transgressor. But the voice of the homœopath and the mind-curer would at once be raised in protest against so positive a treatment. We are regretfully obliged to conclude that despite "emergency lectures" and other kindred instruction to which the police have been introduced, the only really safe ground is for them to be ordered in all cases where unconscious persons come under their care, and the evidence of intoxication is not absolutely clear, to call for medical aid, not necessarily from the nearest "doctor" but from some one who has had experience in the sometimes not easy diagnosis of the different causes of unconsciousness.

— The *Detroit Free Press* thus lets open the floodgates upon a sweltering medical and pharmaceutical public:—

"'I want some consecrated lye,' he slowly announced as he entered the store. 'You mean concentrated lye,' suggested the druggist as he suppressed a smile. 'Well, maybe I do. It does nutmeg any difference. It's what I camphor, anyhow. What does it sulphur?' — 'Eighteen cents a can.' — 'Then you can give me a can.' — 'I never cinnamon who thought himself so witty as you do,' said the druggist in a gingerly manner, feeling called upon to do a little punning himself. 'Well, that's not bad, either,' replied the customer, with a syruptitious glance. 'I ammonia a novice at the business, though I've soda good many puns that other punsters reaped the credit of. However, I don't care a copperas far as I am concerned, though they ought to be handled without cloves till they wouldn't know what was the madder with them. Perhaps I shouldn't myrrh-myrrh. We had a pleasant time, and I shall caraway.' It was too much for the druggist. He had collapsed."

Miscellany.

MACTE LISTER TRIUMPHATOR!

A Moist-merry, Humid-hilarious Antiseptic Vade-mecum of Internal Surgery, for the Ambitious Modern Physician.

BY DR. RISORIUS SANTORINI. Translated by "FAMULUS."

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INTRODUCTION.

There was a time, long years ago,
When all our colleagues flourished;
When Therapeutics, grand, sublime,
With tenderest care was nourished.
Before the bistoury and trocar
Had entered sick-room and boudoir,
In visceral disorders.

The doctor of those good old days,
In bonnet or in hat,
Gave man and woman, right and left,
Prescriptions "quantam sat."
His instruments, in scant array,
Scarce bulged the pocket where they lay,
Corrupt with filth and oxide.

He was withall a surgeon true,
See "quoniam — vir ingenio."
But timid operations few
Comprised him "ab initio."
He, forceps now and then applied,
With trembling midwife for a guide;
"*Three perineal sutures.*"

At times a fracture might occur,
And, rarely, dislocations;
But then, the shepherds cared for these,
As in all Christian nations.
The barber bled, and made the blisters;
The midwife filled and gave the clysters,
Leeched, poulticed and anointed.

So, to the doctor there remained
The visceral diseases;
But even these cases will not come
As often as he pleases.
But, called, the treatment he prepares,
By quarts and pounds and ample jars,
The malady to conquer.

Those were the days of golden gains
For each apothecary;
His friendship for the doctor grew
Like that of Tom for Jerry.
The ℞ and the prescriber too
Were lauded to the azure blue,
By the devout pill-vendor.

But, ah! for ideal therapy
Is now no occupation.
The world is changed; new modes prevail,
And always new vexation.
Internal Surgery claims the field
Where we the power were wont to wield,
And Lister is its champion.

The gathered wealth of roots and herbs
Is daily more neglected;
And only opium's alkaloid
As sedative respected.
Practitioners of code correct
Even find cocaine derelict
As local anæsthetic.

The Pharmacopœia is thrust aside,
A relic of past folly;
With "Seven Specifics" all is done;
It's true, but it's not jolly.
Iodoform is everywhere,
From end of toe to cranial hair,
With acid. sal., et cetera.

Dear Doctor, if you wish to perch
On topmost twig of science,
Practice but surgery, instead
Of drugs, upon your clients.
My counsel will earn many a fee;
Gird up your loins and follow me —
To operative glory.

CHAPTER I.

PLEURITIC EXUDATION.

With scarce a chance of variation
Death follows pleural exudation.—
But if it's *serous*, it may be
Removed by Nature perfectly;
Because absorption *may* take place,
And thus recovery end the case.

If the disease is still *acute*,
Blood-letting may exactly suit;
Followed by a depleting diet,
Emetics, purges, sweats and quiet.

But if at once we see the sign
Of quick increase, and course malign,
If apnœa the patient quails,
And visceral compensation fails,
This should suffice as ample warning
Not to delay till coming morning;
But tap the chest in time to save
The case from a prognosis grave.

But in a *moderate* exudation
No man would counsel exploration.
For it is clear that aspiration
Can never bring amelioration.
That's why our brethren in France
No longer trust unequal chance,
Who earlier counselled costal puncture,
But seldom now approach that juncture;
Because the death-rate's rapid rise
Disclosed its perils to their eyes.
Therefore, dear doctor, be not rash,
The trocar all your hopes may dash.

But if the exudation grows,
Or stationary aspect shows,
If the effusion should compress
The lung, and thus produce distress,—
With atrophy of parenchyma,—
Which oft induces emphysema,
With hypertrophia cardiæ,
And frequently bronchiectasie,
In short, if three weeks' medication
Have not produced amelioration;—
And if by means of Kœrner's method
The *status præsens* is not bettered;
Then you should puncture *instantly*
And set the lung from pressure free.

Is the effusion *purulent*,
It should be given instant vent,
For if you leave the suppuration
To be removed by cell-migration —
Because this now and then may happen —
And hesitate until cachexia
Appears with constant anorexia —
No, thank you. But be not afraid;
Seize boldly your aseptic blade;
Thoracoclasis must be done —
(Vide "Estlander," Vol. I.)
That is, the empyæma-sac
Must be incised from front to back.

If *decomposed* the liquid be,
It adds much to the gravity
Of the prognosis. This is very
Oft but a process secondary;
It follows on gangrena simplex,
E. g., from abscess near the apex;
Cases of bronchiectasie,
As part of their pathology.

Sometimes indeed to our surprise,
A *putrid focus* hidden lies.
This to relieve you should endeavor;
But don't transfix the spleen or liver.
Resound the praise of our vocation!—
Some *have survived* this operation.
. . . . . .
The case pursues a course most tragic
If the effusion's hæmorrhagic;
Although this oft is secondary
To some disease preliminary,
Like cancer or tuberculosis,
Scorbutus, also trichinosis,
Alcoholismus, Bright's, et cetera.

We cannot hope by operation
To gain the least amelioration;
Because the effusion, though reduced,
Is instantly again produced.

We should advise *thoracentesis*
Only when fluid quick increases
Without a known diathesis.
Therefore, if by aspiration
We find a sanguine exudation,
Even if the fluid be *tinged* but bloody,
The Anamnesia we would study;—
But therapy can naught avail.

Conclusio: When the fluid content
Within the chest is subsequent

To a primary process causal
Which *a priori*, is lethal.
All hope is vain, we must agree,
From pulmonary surgery.

But empyema, be it noted,
Falls not within the rule here quoted.

CHAPTER II.

PULMONARY SURGERY.

Of all the viscera, none we see
Changed by disease more frequently
Than is the lung, that grand creation,
On which depends the respiration.
Even if the ambient atmosphere
Were from disease-bacilli clear,
Which once was true in each large town,
As in tradition handed down,
Where Public Sanitation wages
To-day, as in the Middle Ages,
War 'gainst disease in all gradation
From sausage to small-pox-invasion,
Till, without fear of contradiction,
Or being accused of speaking fiction,
We see the prospect indicated,
Phthisis will be exterminated;
Still there remains to taunt ambition
Many a morbid lung-condition,
Which, in the parenchyma seated,
With zeal and vigor must be treated.

But here, again, we see with anguish
That although science does not languish,
But probes the etiology —
We nothing gain in therapy.
For with resinæ podophylli
We fail to drive out the bacilli
Which swarm with reproductive issue
All through the pulmonary tissue.
. . . . . .
At length, when we so long have waited
To see our science vindicated,
Pulmonary Surgery takes its rise!
Let loud hosannas reach the skies!

(a) *Parenchymatous Injection of the Lung.*

What theory have we to guide us
In understanding what 's inside us?
Does Nature act with clear intention?
Reveal design? Display invention?
What could on Nature else prevail
To guard our lungs with coat of mail?
Ah! friend, for Lister's army brave
There is no barrier but the grave.

Deep in our vitals they intrude
And saturate with certitude
The foci where the germs locate
With iodoform and sublimate.
That is, they *speculate*, they *hope*
Thus with diseases grave to cope;
That they may check the irritation
And modify the inflammation,
And by repeated deep injection
May hinder general infection.

Yes, even in tuberculous centres
The aspiration-needle enters.

And, as this therapeutic feature
Is still advanced by each new teacher,
We' ll lock each bacillary matrix
Within a layer of cicatrix.
. . . . . .
Next comes a matter of great gravity,
The sterilization of the cavity;
But — *nota bene* — the physician
Must first locate it with precision,
Determine if the content 's cheesy —
A task which is not always easy.
. . . . . .
In Dorpat dwelt Herr Dr. Koch;
Who used potass. iod. injection
"Almost without febrile reaction"
(Take care; this was on animals);
And found the adjacent lymph-canals
Closed by cicatrix. Yes, on paper
This seems a very proper caper;
But such results within the lung
Are not so easy made as sung.
That lung must in a bear's chest grow
To kindly stop *in statuo quo*
When filled with iodine injection.

"Rational" treatment now is able
On grave disease to turn the table.
Each case of pulmonary trouble
(Especially if it be not double)
Must be attacked by surgery,
If brilliant cures we wish to see.

Mosler brought bronchiectasie
Within thoracic surgery,
And sought to prove to every sceptic
The need of treatment antiseptic.
He made an opening in the lesion,
And aspirated the secretion;
Left a large canula within
For irrigation, p. r. n.

With Koch's and Mosler's theories gifted
(It 's always so), our colleagues shifted.
The eager group which sees perfection
In each new method tried injection.
They thought all cases thus to treat,
Unmindful of the cause or seat,
Not only in tuberculosis,
Putrid bronchitis, lung-necrosis,
Ecchinococcus (several cases),
Infarcts and multiple abscesses.
Recent disease, as well as chronic,
Was treated by this mode Teutonic.
This not exactly a *meme chose* is
In gangrene or tuberculosis.

Argentum nit. and iodine,
Carbolic acid. salicine,
Potassii permanganicum,
With extract queucus fluidum,
Were pumped without a qualm or tremor
Through the pulmonic parenchyma.

Pneumonia due to germ-infection
Lepine then treated by injection,
Where still the lung was hepatized
With hyd. bi-chloride vaporized.
Whereby, not only — thank the Lord! —
The temperature "at once was lowered,"

But this subdued the inflammation,
And — presto — stopped the crepitation!
Then vivat, crescat, floreat
Renowned corrosive sublimate!
And may the great name of Lepine
Be emblazoned on Apollo's shrine!

But I, my friend, hold strong conviction
Against Lepine's heroic prescription.
The lung, with sixty hours' duration
Of sharp and vivid inflammation
Cannot at once resume its function,
Even by mercurial inunction!
Lepine, with zeal and tact ambitious,
Has taught a doctrine most pernicious!

This factum note: — Against injection
You should afford the lung protection
In phthisis and pneumonia.
Only in bronchiectasie
With well-determined cavity;
When even profuse expectoration
Does not reduce the exudation;
So that gangrene, thrombosis, dropsy,
Suggest the patient's near autopsy,
You should with promptness operate,
And flush with sodium carbolate.

(b) *Opening and Draining of Pulmonary Cavities.*

In diagnosis, great vexation
Pertains to bronchial dilatation.
In size and seat it's most erratic,
Presents no features symptomatic;
May be in front, or far posterior,
In apex, or in lobe inferior;
Sometimes it's large, with capsule dural;
It may be deep, may be sub-pleural;
Sometimes a single tube's dilated;
But usually it's disseminated,
And wakes a crepitation-chorus,
Till we scarce know what is before us.
In short, you'll find it, I may state,
Quite hard to diagnosticate.

But if kind fate should grant to you
To localize a focus true
By tympanitic resonance,
Our therapy claims no advance.
Still if the use of Abbé's prism
Reveals no septic organism,
Then operate both deep and wide —
The holy Mosler be your guide.

He cured a follower of St. Dominic
At Greifswald, [vide Hueter's Clinic]; —
Too freely quoted it can't be,
This famous case of bronchiectasie.
Eh? — cured? — How can you make the query?
Such a suggestion makes me weary
Three months and more of time went past
Before the patient breathed his last!
In the report of the obduction —
Perhaps through wilful misconstruction —
We find, as total diagnosis,
The single word "tuberculosis!"

Therefore — bacilli being detected,
Trocar and drain must be rejected!
In case of bronchial dilatation
'T will surely prove an aggravation.

Renounce the knife — bold measures cease,
And let the patient die in peace.

In abscess of the lung, however,
To free the pus you should endeavor.
But if gangrene is on the docket,
Then put your lancet in your pocket.

Here it's important you should try
To trace the etiology!
If it is primary, make no parley; —
The case has else but one finale; —
Provide immediate path of drain;
Let not a drop of pus remain.

But if the gangrene is a sequel
E. g., of abscess or its equal,
Pneumonia interstitialis,
Or infarct hæmorrhag. centralis,
Waste no more time in medication,
But follow Fenger's innovation.

You may in this be justified
By previous puncture though the side: —
Although the smell is quite sufficient
To indicate what ails the patient; —
Added to this — without cessation
A grayish-red expectoration: —
Quickly the ribs must be resected,
The cavity throughout inspected —
Then by the aid of Paquelin's cautery,
Proceed to carbonize the cavity;
And follow out each wandering sinus
Whate'er its nature, great or minus;
Then as the climax of devotion
Wash out with salicylic lotion,
Insufflate well with iodoform,
The enemy of every germ;
Drain-tubes a couple, gauze and peat
Bandage, and India-rubber sheet. —
Then should the patient live or perish,
You've none but pleasant thoughts to cherish.
You've followed Lister's full direction,
And can repose in his protection.

(To be continued.)

LINEÆ ALBICANTES IN TYPHOID FEVER.

THE *Lancet* remarks that sometimes atrophic lines so common after distension of the skin appear without any obvious cause of stretching. Manouvriez and Bouchard have recorded such cases occurring in the course of convalescence from typhoid fever. Troisier has given an interesting account of this condition in the *Bulletin de la Société Médicale des Hôpitaux*, No. 12. These lines have been noticed, especially in children and young adults. Bouchard considered that they were due to stretching resulting from rapid growth after the subsidence of the fever. Troisier and Menetrier have noted that the elastic tissues of the skin are less thick at the level of the "atrophic" area, but they failed to find any real evidence of wasting of tissue; the elastic fibres were simply torn through and curled up at their broken ends. M. Bucquoy said that in boys the whitish lines have no special distribution, but in girls the breasts and the iliac crests appear to be chosen sites. M. Barié referred to a case in a girl aged seventeen, in whom the lines were situated over the tibio-tarsal articulation on each side.

MERCURIC CHANGED TO MERCUROUS CHLORIDE.

DR. SAMUEL KENNEDY communicates to the *Pharmaceutic Record* the results of his experiments with bichloride of mercury in solution.

He found by repeated testing that compound syrup of sarsaparilla reduces mercuric to mercurous chloride. If a little common salt is added to the solution, the buff-colored precipitate of calomel does not take place for at least two or three weeks. He advises to add to prescriptions in which corrosive sublimate enters as an ingredient, an amount of common salt equal to the weight of the corrosive sublimate.

Correspondence.

DINNER TO FOREIGN GUESTS OF THE CONGRESS OF PHYSICIANS AND SURGEONS.

WASHINGTON, August 21, 1888.

MR. EDITOR, — Some complaints having reached the committee in regard to the distribution of invitations to the dinner to be given to the foreign guests of the Congress of Physicians and Surgeons, to be held in this city next month, I must beg the use of your columns to say that this distribution was in my hands.

The council of the Congress having expressed themselves as averse to any elaborate entertainment on the part of the Congress, it may be said, in the first place, that this dinner is *unofficial*, and is in the hands of the *members* of the committee, and not of the committee. As it was necessary, after the matter was decided upon, to act quickly in order that proper invitations might be sent to Europe and answered in time, it was not possible to arrange this distribution so methodically as might have been done had the time been longer. It was intended that every member of the Congress, that is, every member of any of the constituent associations, should have an opportunity to subscribe.

Some circulars were sent directly by me, and some of them by such representatives of the associations as I could most readily get at. It is possible that there may have been some accidental omissions; and it is more than possible that at this season, when so many gentlemen are absent from home, some invitations may have gone astray. Another possibility, which we know to have been in some cases an absolute fact, is that they have been placed in the waste-paper basket.

This note is intended as an invitation to every member of all the associations composing the Congress of American Physicians and Surgeons, who wishes to do so, to send his subscription of twenty dollars to Dr. S. C. Busey, 1545 I St., N. W., Washington, D. C., for a dinner to be given at Willard's Hotel in this city, on Monday, September 17th, at 7.30 P. M.

I am, very respectfully,
ROBERT T. EDES, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 11, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	846	416	33.72	10.68	23.16	.48	3.96
Philadelphia	1,016,758	508	267	28.50	7.79	18.43	7.07	1.14
Brooklyn	751,432	366	197	32.76	9.36	24.18	.78	5.72
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	—	—	—	—	—	—	—
Boston	407,024	239	111	40.12	13.44	28.14	2.10	4.62
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans	248,000	—	—	—	—	—	—	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	154	82	36.40	9.75	26.00	2.60	—
Pittsburgh	210,000	93	55	35.64	9.72	22.68	3.24	2.16
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	26	11	46.20	11.55	19.25	11.55	—
Charleston	60,145	44	19	20.43	6.81	11.35	6.81	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	76,328	39	23	46.08	10.24	46.08	—	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	21	12	66.66	14.28	52.36	4.76	—
Fall River	61,203	36	24	94.52	5.56	80.62	5.56	—
Lynn	51,467	14	—	14.28	28.56	—	—	—
Lawrence	40,175	26	20	65.45	—	60.60	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	16	9	49.00	12.50	49.00	—	—
Somerville	33,307	11	5	18.18	9.09	9.09	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	15	9	6.66	6.66	6.66	—	—
Chelsea	27,552	19	8	31.56	5.26	31.56	—	—
Haverhill	24,979	6	2	16.66	—	16.66	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	4	1	50.00	25.00	25.00	25.00	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	7	3	28.56	28.56	14.28	—	14.28
Malden	18,932	7	5	85.68	—	71.40	—	14.28
Fitchburg	17,534	8	2	12.50	25.00	12.50	—	—
Waltham	16,651	8	3	25.00	25.00	25.00	—	—
Newburyport	13,839	12	5	41.65	8.33	41.65	—	—
Northampton	13,419	6	2	16.66	—	16.66	—	—

Deaths reported 2,531: under five years of age 1,291; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 874, consumption 253, acute lung diseases 119, diarrhœal diseases 628, diphtheria and croup 76, typhoid fever 66, whooping-cough 38, scarlet fever 20, measles 13, malarial fever 11, cerebro-spinal meningitis 10, puerperal fever eight, small-pox two, erysipelas two. From whooping-cough, New York 15, Washington eight, Philadelphia and Brooklyn four each, Boston, Pittsburgh and Cambridge two each, Fall River one. From scarlet fever New York 14, Philadelphia four, Brooklyn and Nashville one each. From measles New York 11, Pittsburgh and Lawrence one each. From malarial fevers New York six, Brooklyn three, Nashville and Charleston one each. From cerebro-spinal meningitis, Washington three, New York, Nashville and Lynn two each, Somerville one. From puerperal fever Pittsburgh four, Fall River two, Boston and Washington one each. From small-pox, Philadelphia two. From erysipelas, New York two.

The meteorological record for the week ending August 11, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Aug. 11, 1888.	Barometer.	Thermometer.			Relative Humidity.				Direction of Wind.			Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum	7.00 A. M.		8.00 P. M.	Daily Mean.	8.00 A. M.		8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,... 5	29.82	74.0	82.0	70.0	83.0		90.0	86.0	W.		S.E.	10	6	F.	O.		
Monday,.. 6	29.95	62.0	88.0	60.0	100.0		100.0	100.0	N.E.		N E.	12	16	R.	R.	7.00	.88
Tuesday,.. 7	29.95	61.0	68.0	60.0	92.0		92.0	92.0	N.E.		E.	10	9	O.	O.	2.00	.14
Wednes,.. 8	30.01	65.0	67.0	60.0	92.0		83.0	88.0	E.		S.W.	6	12	O.	O.		
Thursday, 9	29.97	75.0	87.0	60.0	93.0		43.0	68.0	S.		N.W.	8	10	O.	O.	2.00	.02
Friday, ...10	30.20	70.0	81.0	61.0	63.0		51.0	56 0	N.		N.	12	9	F.	C.		
Saturday,.11	30.29	66.0	81.0	58.0	53.0		80.0	67.0	N.		E.	6	10	C.	O.		
Mean, the Week.																	

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE TWO WEEKS ENDING AUGUST 18, 1888.

WHITAKER, H. W., passed assistant surgeon. Detached from the "Mohican" proceed home and await orders.

FERREER, N. M., surgeon. Detached from the "Franklin" and to the Naval Hospital, Norfolk, Va.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING AUGUST 13, 1888.

PURVIANCE, GEORGE, surgeon. Granted leave of absence for thirty days. August 13, 1888.

SAWTELLE, H. W., surgeon. Detailed as member of Board to select site for quarantine station at San Diego, Cal. August 6, 1888.

GOLDSBOROUGH, C. B., surgeon. Granted leave of absence for thirty days. August 10, 1888.

GUITERAS, JOHN, passed assistant surgeon. To proceed to Sanford and Jacksonville, Fla., and Way Cross and DuPont, Ga., on special duty. August 1, 6, 9, 10, 1888.

BANKS, C. E., passed assistant surgeon. Granted leave of absence for four days. August 6, 9, 1888.

PECKHAM, C. T., passed assistant surgeon. Granted leave of absence for thirty days. August 10, 1888.

URQUHART, F. M., passed assistant surgeon. To proceed to Way Cross, Ga., on special duty. August 9, 1888.

GLENNAN, A. H., passed assistant surgeon. Detailed as member of Board to select site for quarantine station at Port Townsend, Wash. August 6, 1888.

WASDIN, EUGENE, passed assistant surgeon. Detailed as member of Board to select site for quarantine station at Key West, Fla. August 6, 1888.

WILLIAMS, L. L., passed assistant surgeon. Granted leave of absence for fifteen days on account of sickness. August 10, 1888.

STONER, J. B., assistant surgeon. To proceed to Norfolk, Va., for temporary duty. August 9, 1888.

SOCIETY NOTICE.

AMERICAN DERMATOLOGICAL ASSOCIATION.— Programme of the Twelfth Annual Meeting to be held at Willard's Hotel, Washington, D. C., September 18, 19, and 20, 1888. Officers for 1888. President, Dr. I. E. Atkinson, of Baltimore. Vice-President, Dr. P. A. Morrow, of New York. Secretary and Treasurer, Dr. G. H. Tilden, of Boston.

First Day. Tuesday, September 18th.— Business Meeting (with closed doors), at 9.30 A. M. Morning Session at 10.30 A. M. Address by the President, Dr. I. E. Atkinson. (1) The Electrolytic Decomposition of Organic Tissues, Dr. G. H. Rohe. (2) The Value of Salicylic Acid in Dermatology, Dr. Heitzmann. (3) Hereditary Dermatoses, Dr. J. C. White. Adjournment at 1.30 P. M. Afternoon Session at 3.30 P. M. (4) A Report of Four Cases of Dermatitis Herpetiformis, Dr. J. E. Graham. (5) Dermatitis Herpetiformis, with Notes of Three Cases, Dr. H. W. Stelwagon. (6) Personal Observations on Skin Diseases in the Negro, Dr. R. B. Morison. (7) Note of a Case of Filaria Medinensis, Dr. A. Van Harlingen. Adjournment at 5.30 P. M.

Second Day. Wednesday, September 19th.— Business Meeting (with closed doors), at 9.30 A. M. Morning Session at 10.30 A. M. Report of Committee on Statistics: Report of Committee on Nomenclature. (8) So-Called Acne Anthracoide Iodopotassique, Dr. R. W. Taylor. (9) Note Relative to the Vegetative Lesions Induced by Ingestion of some of the Iodine Compounds, Dr. J. N. Hyde. (10) Notes on Some Unusual Cases of Skin Disease, Dr. W. A. Hardaway. (11) A Contribution to the Clinical History of Alopecia Areata, Dr. A. Van Harlingen. Adjournment at 1.30 P. M. Afternoon Session at 3.30 P. M. (12) The Non-Identity of Lichen Planus and Lichen Ruber, Dr. G. H. Fox. (13) The Question of Relationship between Lichen Ruber (Hebra) and Lichen Planus (Wilson), Dr. A. R. Robinson. (14) Multiple Pigmentary Sarcoma, Dr. E. B. Bronson. (15) Dermatitis Plantaris and Palmaris, Dr. L. Duncan Bulkley. Adjournment at 5.30 P. M.

Third Day. Thursday, September 20th.— Morning Session at 10 A. M. (16) Raynaud's Disease and Symmetrical Gangrene in late Syphilis, Dr. R. W. Taylor. (17) The Relation of Framboesia to Syphilis and Tuberculosis of the Skin, with Report of a Case, Dr. P. A. Morrow. (18) Kraurosis of the Vulva (Breisky), Dr. C. Heitzmann. (19) Molluscum Contagiosum, a Clinical Report, Dr. H. W. Stelwagon. Retirement of old, and induction of newly-elected officers. Adjournment at 1 P. M.

Original Articles.

OBSERVATIONS ON THE SURGICAL TREATMENT OF MALIGNANT GROWTHS.[1]

BY MAURICE H. RICHARDSON, M.D., OF BOSTON.

At the annual meeting of this Society in June, 1886, Dr. Hodges, in his admirable address, made the following statement: "Therapeutics, when not guided by an intelligent and definite purpose, are superfluous and meddlesome. Surgical operations which, from the outset, it is known cannot be completed, and into which every surgeon remembers with regret that he has been drawn by some vague expectation of benefit — the infiltrating epitheliomata, the adherent and fatally located tumors, the malignant growths sure to return, the limbs crushed in railroad accidents from which he has not withheld his hand — have certainly contributed nothing to the self-satisfaction of the operator, or helped to advance even the purely mechanical part of surgery. . . . The operation for cancer of the breast was as habitual as it is now exceptional — or, at least, as it soon will be."

He refers to the *Lancet*, March 21, 1885, p. 527, and January 9, 1886, p. 72. In a foot-note quoting from Vernueil (*N. Y. Med. Record*, January 9, 1886, p. 56): "Of one hundred possible operations, twenty are imperatively necessary, twenty are absolutely inadmissible, and the remaining sixty may be performed or not, according to circumstances, and surgeons may and do err in each of these classes of cases."

Such an expression of opinion from so eminent an authority in surgery as Dr. Hodges deserves the greatest respect, and carries great weight. I certainly agree with him in most of the opinions quoted above. No surgeon can object to the opinion that operations should not be undertaken where the malignant growth cannot be completely removed, if this can be known beforehand, unless it is done for other reasons than the hope of a permanent cure, or adding materially to the duration of life.

To the second statement — that the operation for cancer of the breast is now exceptional or soon will be — I take exception, and I have ventured to present my views on this subject, and to give my reasons, in the following paper, why I believe that the excision of tumors of the breast, as well as of other parts of the body, will become more frequent, as well as more successful.

The work necessary for the preparation of a paper based upon the experience of the Massachusetts General Hospital is very great indeed. Last year, I began the work of collecting all the cases of malignant disease treated in the Hospital by excision from November 1, 1877, to January 1, 1887. Thus far I have collected only the tumors located in the easily accessible parts of the body, and I shall consider in this paper only growths located on the face, lips, lids, scalp, ear, and tongue, the neck and body, the breast, the upper and lower extremities, and the external male and female genitals.

I cannot state my belief as to the best treatment of malignant growths better than by quoting from the authority referred to by Dr. Hodges in his paper (*Lancet*, January 9, 1886, p. 72, editorial): "A great risk and a severe operation are only justifiable when the advantage is also great. When, for example, an operation promises complete cure or long immunity from an otherwise certainly fatal malady, it is obviously right to undertake it, even if it be severe and dangerous. This is a somewhat self-evident proposition, and yet one of its applications to practice is often lost sight of. Experience has fully shown that, other things being equal, the success of excision of malignant growths is largely dependent upon the period at which they are performed. As, therefore, an early operation for cancer offers a far greater prospect of long immunity from recurrence than a later one, a wide and more severe operation is justified in the earlier, rather than in the later stage. The contrary view is sometimes acted upon, even when not actually stated. Excisions of limited extent are often practised when malignant tumors are small, and because they are small and of recent origin, while in tumors of greater age and more extensive growth more formidable operations are readily undertaken, in spite of the small prospect of success they hold out. The converse should be the rule. When the surgeon has to do with a case in which a free excision holds out a strong hope of long immunity, or even a cure, a very thorough operation should be performed, even although it cause some deformity or mutilation, or expose the patient's life to danger. The great advantage to be expected from such an operation justifies the greater severity and the extra risk of such a procedure. Where the object aimed at is the removal of a malignant tumor, with a view of interrupting for a time or stopping forever its growth, the principle should be kept in view, and, if it were fully carried out in the early operations, we believe the practice would be attended with most favorable results."

Speaking of operations of great severity, where it is merely a question of prolonging life: "In all the isolated brilliant achievements of surgeons in this region of practice, it is doubtful whether some of these operations have resulted in adding to the sum total of human life; the prolongation of a life here and there does not compensate for the cutting short of that of many others."

I believe that the immediate future will see a great increase in the number of these operations, and very much greater success will follow them by the recognition, on the part of the general practitioner, of the vital importance of early diagnosis and excision of all growths situated in those parts of the body especially liable to malignant disease, and by the adoption on the part of the operator of the principle quoted, that it is in the early stage of the disease that the most radical operation should be done.

It is hardly necessary for me to call the attention of members of the Society to the dreadful condition of body and mind to which this fearful disease sooner or later reduces the unfortunate patient. Every physician knows that malignant disease, especially certain forms of carcinoma, is a terrible thing. If left to itself there is a period of life, quite definitely shown by statistical tables, during which the life of the patient is one of dreadful suffering, and he may become an object of loathing to himself and his friends. It is a mercy if this period is shortened by intercurrent disease or by the early invasion of the internal organs.

From a great mass of statistics, we can easily find the average duration of life in different forms of malignant disease where no operation has been done. We

[1] Read before the Massachusetts Medical Society, June 13, 1888, and recommended for publication by the Society.

can ascertain in the same way the duration of life in all the great classes of malignant disease where an operation for relief or cure has been done, and it must be acknowledged that in most forms the prolongation of life and the alleviation of suffering do not present a very favorable outlook. But, nevertheless, it does not seem to me that we are justified, in the face of these statistics, in saying that all attempts at cure or relief should, therefore, be abandoned. Probably every physician in this room has had cases, or knows of cases, in which an operation for the cure of cancer has been perfectly and permanently successful. If we can show that there is even a small percentage of complete recoveries, are we not justified, and is it not our duty, to operate in all cases where there is no definite contraindication, as shown below? It is certain that in many cases life is prolonged for years. It is no doubt true, also, that in a certain number of cases life is shortened; but, if we analyze such cases, we shall find, I think, that in the majority of them the disease was attended by such conditions as would, in my opinion, now render an operation unadvisable.

I would say here, once for all, that cases evidently incurable are not considered at all in this paper. Even in hopeless cases, no one will deny, I think, that operations are sometimes demanded for the relief of pain or the removal of an offensive mass.

It is generally admitted that malignant disease is a local, not a constitutional affection. We must look, then, for the cause of failure in the operation itself, provided we can show that in a given case there was no invasions of distant organs by the disease which was overlooked. The points to be considered in the following analysis of cases are, first, the thoroughness of the excision, and second, the evidence by which we can decide that an operation is inadmissible.

The cause of the ill-success hitherto met with in these operations is: (1) in early and favorable cases the excision is not thorough; (2) sufficient attention is not given to the existence of glandular infection and metastasis of the internal organs as contraindications.

It is the imperative duty of every surgeon and every practitioner of medicine to investigate at once every new growth which comes under his observation, with a view to perform the most radical excision as soon as its malignancy has become established, provided, of course, the disease can be thoroughly removed, and provided there are no contraindications either in the disease itself or in the general condition of the patient. The most favorable time for operation is the very earliest possible after its discovery, and *then* is the time when a thorough removal promises the best chance for recovery. I am perfectly aware that all these remarks are truisms, but, nevertheless, it seems to me worth while to emphasize them again. Nothing is more common in the experience of every surgeon than to meet with cases of inoperable malignant disease which have been treated for a long time as benign by local applications, constitutional remedies and other methods, while the favorable opportunity for surgical interference has been lost. All cases, for instance, of ulceration of the lip after the age of thirty; all slowly growing tumors of the breast after the age of thirty; the rapidly growing tumors of childhood and youth; in fact, all rapidly growing tumors of all times of life are of sufficient gravity to make it the imperative duty of the attending physician to take measures to ascertain their nature. It is not right to allow a crust or ulceration of the lip to grow unchecked, or to allow a tumor of the breast to increase until the axillary glands become involved, in the hope that there is nothing malignant in these cases, when we know that by far the greater number of them, after the age of thirty, are malignant, and that a most fearful death awaits the patient, in the course of a short time, if something is not done to prevent it. It is of the greatest importance, then, to recognize at the earliest possible moment the existence and nature of a new growth, no matter how trivial, in any part of the body which is known to be the common seat of malignant disease. A lady of forty-five consults the physician for a small lump which she has discovered in her breast. She is very nervous and much excited, and fears that she has a cancer of the breast. It is the natural wish of the physician to assure her that it is probably nothing, that it has always existed, and will never amount to anything. But do we not by such advice allow the opportune moment to escape? Is not this the time when of all times an operation should be advised and done? The lady presents herself again, perhaps, for examination in the course of six months or a year. Resting upon the assurance of the physician, nothing has been done; her mind has been at rest, and the gradual enlargement of the growth has excited no fresh apprehension. She is again examined and the axillary glands are found involved. An operation is now advised and performed. The focus of infection which at first was limited to the breast, and which might have been removed most thoroughly, has already extended to numerous points in the axilla. A much more radical operation has become necessary, and her chance for recovery has been diminished. The same experience is constantly met with in ulcerations of the lip. I would, therefore, emphasize most strongly the importance on the part of every physician of early recognition of the nature of all new growths.

When the malignancy of the growth has been established by microscopic examination, and when by the most searching physical examination no extension can be found to exist in the thorax or abdomen, and when the lymph-glands are unaffected, or if involved they are within reach and admit of complete excision, then the operation should be undertaken. But even then the patient should be informed of the serious nature of the disease and the probability of recurrence, before excision should be performed. It is not right to subject any patient to an operation with the assurance that there is no danger of return. He has a right to know the facts before submitting to the necessary suffering, and incurring risk of immediate death. In this way the surgeon and his art will be protected from the criticism, too often true, that harm has been done instead of good, and that life has been shortened rather than prolonged. Such criticisms, no doubt often undeserved and unjust, are very common among the laity, and many have come to me among the responses to my letters. By careful attention to these suggestions, in every case, I am convinced that not only will many fatal results be avoided, but in the event of recurrence the friends and the patient himself will have no cause to complain.

The operation of excision should never be undertaken unless it is certain that all the growth can be removed, — that is, as an operation for cure. When

it has been decided that complete excision is possible, or that it is not impossible, then the growth should be removed with the knife in such a manner as to take with the tumor a broad margin of skin and a deep layer of healthy subjacent tissue, regardless of deformity or mutilation.

The existence of affected lymph-glands, while it is almost a contraindication to the performance of an operation, does not necessarily remove all chances of cure. When they are present they should be removed in the most thorough manner as far as they can be felt, with the surrounding tissues, and with all the parts between them and the tumor through which the lymph vessels are known to run. I have met with many cases, especially in cancer of the breast, where there has been immunity from the disease for several years, and where the reappearance has taken place in the breast scar rather than in the axilla, after the most thorough dissection of that space.

I have no doubt that it is impracticable to perform as thorough excision as I have recommended, especially in cases of mutilation of the features, yet I am fully convinced that such mutilations in the first operation, — in epitheliomata of the lip and lid for example, — would prevent in a great many cases the horrid deformities which make their appearance in the later stages of the disease.

From November 1, 1877 to January 1, 1887, eight hundred and thirty-three cases of new growths were treated at the Massachusetts General Hospital by excision. It is very probable that some of these were not malignant, but by far the greater number were. They embrace all varieties of malignancy, all ages, and all occupations. Of these eight hundred and thirty-three cases I have recent information in four hundred and ninety-eight. Of the four hundred and ninety-eight, two hundred and fifty-one are living and two hundred and forty-seven are dead.

Of those operated on previous to 1881, there are now living, 38.2%; dead, 61.8%.

Operated upon in	1881	Living,	52.8%	Dead,	47.2%
"	1882	"	45.6	"	54.4
"	1883	"	49.2	"	50.8
"	1884	"	59.4	"	40.6
"	1885	"	61.	"	39.
"	1886	"	71.4	"	28.6

I have not included in these returns those cases where I have obtained information not accompanied with that of their present condition. There are many cases where the patient was incurable and where no second operation was done, which would increase the death side of the table very materially.

Taken as a whole these cases present very hopeful results and encourage, I think, the performance of excision as a general rule. If the present practice of more radical excision had been done in all these cases, and if fewer attempts had been made in the now-considered hopeless cases, I have no doubt the showing would have been much better than it is.

First in importance and frequency come Tumors of the Breast, with 274 operations. I have received 163 replies. Of the 163, 68 are living and 95 dead.

Next comes Epitheliomata of Head, Neck and Face, with 114 cases, from whom I have received 67 replies, with 34 living and 33 dead.

Tumors of the Extremities, all varieties. 89 cases; 56 replies, 37 living and 19 dead.

Cancer of Lip. 75 cases (not included in Epitheliomata), with 51 replies, 26 living and 25 dead.

Tumors of the Jaws. 40 cases; 20 replies, 11 living and nine dead. (Not including Epulis.)

Epulis. 20 cases; 11 answers, 10 living and 1 dead.

Penis. 22 cases; 10 answers, 6 living and 4 dead.

Female Genitals. 14 cases; 3 answers, 2 living and 1 dead.

Tongue. 20 cases; 13 answers, 11 dead, 2 living.

Palate. 6 cases; 6 replies, 4 living and 2 dead.

Tonsil. 1 case, living.

Parotid. 11 cases; 5 replies, all living and well.

Melanotic Sarcomata. 10 cases; 8 replies, 1 living and 7 dead. The only living case was undoubtedly a melanotic sarcoma shown by the microscope.

Lymphosarcomata. Besides those cases included in the parts already given, 4 cases; 3 replies, all dead.

Excision of Tumors of the Testicle. 15 cases; replies 9, living 2 and dead 7. The 2 living cases were sarcoma and tuberculosis.

It must be borne in mind that there are quite a number of cases included in these lists which are probably not malignant. It is very unfortunate that there has been no microscopic examination in so many of the older cases. Death from a tumor or recurrence is sufficient evidence, however, of the malignancy of it. It has been impossible for me to go over all the cases and make the proper eliminations, except in the tumors of the breast, so that the figures and percentages are not as yet correct. They are sufficiently accurate, I think, for me to draw certain conclusions at this time. In a later paper I hope to be able to present the evidence in a more satisfactory form.

First in malignancy and fatality come the few cases of Lymphosarcomata,— all being now dead that have been heard from. Next come the Melanotic Sarcomata, with 7 dead out of 8. 87.5%.

Cancer of the Tongue, 84.6% dead.
Tumors of the Testicle, 77% dead.
Tumors of the Breast, 58% dead.
Epitheliomata of Face, etc., 49.2% dead.
Cancer of the Lip, 49% dead.
Tumors of the Jaws, 45% dead.
Cancer of the Penis, 40% dead.
Tumors of the Extremities, 34% dead.
Female Genitals, 33.3% dead.
Tumors of the Palate, 33.3% dead.
Tonsil and Parotid, all living.

While I am perfectly aware that these figures are not entirely reliable and accurate, as showing the percentage of recurrence and death after operation for malignant disease, and are open to criticism because the variety of growth is not given in all cases, yet in a general way they show the comparative malignancy of the various classes and situations, and enable me to emphasize certain facts to which I wish to call attention. We can say, for example, that operations undertaken for the cure of cancer of the tongue, as performed at the hospital during the past twelve years, offer very little chance of success, and the same may be said of the lympho- and melanotic-sarcomata. Tumors of the testicle and jaws also present a fearful mortality during that period. On the other hand, tumors of the palate, of the extremities (especially where amputation has been done), and even cancer of the lip and epitheliomta of the face, present much more favorable showings.

There is left the middle and much more important class of tumors of the breast, where the present living

percentage of forty-two per cent. is encouraging enough to justify renewed efforts in that direction.

Lymphosarcomata.— The results in these operations are too few to base much upon them. I do not believe, however, that excision of a large number of these glands in the neck will long continue to be good practice. I have done the operation several times, and have removed at one operation forty-five glands from the neck, and within a month as many more from the same boy. I do not believe that it is possible to effect a permanent cure, unless it can be reasonably certain that there are but one or two glands affected, and those within easy reach. I would apply the same general rule to these glands that I would to the secondary infiltration of the axillary glands in carcinoma of the breast, or to that following malignant disease of the extremities, namely, that no operation is justifiable where the glands are beyond easy reach. That is to say, when the infected gland is above the clavicle in breast and arm cases, or behind it in neck cases, or above Poupart's ligament behind the peritoneum in cancer of the genitals or of the lower extremity. In a case of lymphosarcoma, where but one gland is involved, it seems to me that operation is imperative; but in cases where a great mass of glands fills the neck and axilla, I believe that nothing can be expected beyond a possible prolongation of life and that is very uncertain.

Melanotic Sarcomata.— The mortality is extremely discouraging in this class of tumor. Most of the cases have affected the lower extremity. In these cases I believe that an early realization of the nature of the case, and the most thorough application of the most radical methods of excision will be followed by more favorable results. Such a case, a melanotic-sarcoma of the foot for example, if discovered before any glandular infiltration has taken place, demands amputation at once. The tendency of this disease to glandular complications and internal metastases will always make the failures large. In this, as in other forms of malignant disease to be considered, the ideal operation cannot be performed because of the very natural objection on the part of the patient to a sacrifice so out of proportion to the apparent necessities of the case. Yet it seems to me that the facts demand that the most radical measures be selected to meet the dangers of early internal infection in the melanotic sarcomata.

Cancer of the Tongue. — This is equally discouraging. Of the two cases now living out of a possible thirteen, one was probably not malignant, and the other so small that a wide margin of healthy tissue was left.

No attempt at removal of the tongue is justifiable, judging from these few cases alone, unless the operation is so radical as to leave a wide margin of unaffected parts. I believe that total excision is the only justifiable practice where the tumor is of any extent. The rapidity of growth of this disease makes it very important that it should be recognized early. It should then be most thoroughly removed, even sacrificing the whole organ if necessary, but should not be done, as it seems to me, where there is the additional complication of invaded cervical glands. That adds, I think, the deciding element.

Of the eleven cases heard from, nine are dead. One of the living should be excluded. The other living case was operated upon in 1884, and the tumor was very small and easily excised. One of the deaths followed the operation, one occurred at the end of three months, one at four, one at five, one at six, one at twelve, one at fourteen, two at twenty, and one uncertain. The average duration of life was ten and a half months. It can hardly be said that life has been prolonged in these cases to any considerable degree, certainly not enough to justify the operation.

In such cases as these it seems to me that true conservatism demands that very few of them be touched, but when an operation is done it should be of the most thorough and formidable character. Removal by any other means than the knife, or, the growth being located near the tip of the tongue, the écraseur or the ligature, is not to be thought of for the purpose of cure.

(To be continued.)

REPORT OF CASES CONFINED AT THE BOSTON LYING-IN HOSPITAL DURING THE THREE MONTHS, JANUARY 1 TO APRIL 1, 1888.[1]

SERVICE OF DR. W. E. BOARDMAN.

IT is my privilege to inaugurate the custom of rendering to this Society a quarterly summary of the service at the Hospital. From this and succeeding reports it is believed that some, possibly much, information of value may be derived. You are quite familiar with the class of patients which are received there, and the profession, generally, is now well informed as to the routine methods of treatment pursued, which have been so clearly described by my colleague, Dr. Richardson, in a paper recently read before this Society, which shows conclusively to our minds the value — indeed, the necessity—of aseptic and antiseptic precautions in midwifery, a conclusion which the experience herewith presented will serve to emphasize, comprising, as it does, the largest number of patients confined at the Hospital in any quarter-year, and including a large proportion of complicated and serious operative cases, all of which recovered promptly without alarming symptoms. Indeed, the only case of evident protracted septicæmia was that of Jessie M., whose labor was normal, and whose temperature did not begin to rise until the eighth day of convalescence, when it was determined that the disturbance was due to a malposition of the uterus, which occasioned an obstruction to the escape of the lochial discharge from the cervix.

I deem it proper to state that the very successful issue of all the cases was largely, if not chiefly, due to the intelligent, efficient, and unremitting care of the internes, Drs. Mead, Paul, and Yage.

Primiparæ, 77; multiparæ, 35; total, 112. Married, 58; single, 54; total, 112.

		S	M
I	paræ	77	52	25
II	"	16	2	14
III	"	10	..	10
IV	"	3	..	3
V	"	..	..	..
VI	"	2	..	2
VII	"	..	..	..
VIII	"	2	..	2
IX	"	2	..	2
	Totals,	112	54	58

Average age of primiparæ, 23 6-7 (oldest 36, youngest 16.) Average age of multiparæ, 28 5-7 (oldest 42, youngest 20.)

Primiparæ,	72 Head (93.5 %),	4 Footling (5.2 %).	1 Breech (1.3 %).			
Multiparæ,	35 " (100 %).					
Primip.,	38 O.L.A., 49 1-3 %	33 O.D.P., 42 6-7 %	1 O.D.A., 1.3 %	0 O.L.P., ..	2 S.D.P., 2.6 %	3 S.L.A. 3 6-7%
Multip.,	25 O.L.A., 71 3-7 %	9 O.D.P., 25.7 %	.. ..	1 O.L.P., 2.8 %	.. ..	.. ..

[1] Read before the Obstetrical Society of Boston, May 12, 1888.

PREMATURE LABOR.

Primiparæ — 1 8 mo. 2 7 mo. 1 6 mo. 1 5 mo. 1 O.L.A. 1 O.D.P. 2 Footling. 1 Breech.

Multiparæ — 2 7 mo. 1 O.L.A. 1 unknown.

Abortions none.

Labors: natural, 94; laborious, 8; complex, 5.

Forceps were applied in seven cases: in four instances the high operation was done.

Version after manual dilatation of the os was done in two cases, and attempted in a third case where the os was fully dilated. Eclampsia occurred in one of these cases.

There was one case of complete placenta prævia.

Craniotomy was done upon the dead fœtus, once on the after-coming, and once on the presenting head.

Twins occurred only in one instance.

These cases are given somewhat in detail later on.

Average duration of labor: primiparæ, 24 h., 3 min. (first stage, 22 h., 45 min.; second stage, 1 h., 25 min.; third stage, 11 + m.); multiparæ, 28 h., 7 min. (first stage, 27 h., 27 min; second stage, 22½ m. third stage, 10½ m.) — one case, 147 h., 30 min., and another, 286 h., 45 min.

Urine (taken on entrance): albumen found in 29 cases, and casts in one (Case III), described later.

Maternal pulse: average after completion of second stage, 84⅜ (highest, 144, lowest 60); average after third stage, 86⅜ (highest 144, lowest 60). The highest rate was in Case V, with placenta prævia.

CHILDREN.

Whole number, 113.

Fœtal heart averaged 136 + (highest, a girl, 178; lowest, a boy, 110). Boys' average, 136 +; girls' average, 135 +.

Sex: 58 male (43 primiparæ, 15 multiparæ); 55 female (35 primiparæ, 20 multiparæ).

Length, average: male, 21.1 in.; female, 21.06 in. Longest (female), 24 in.; shortest (male and female) 17.5 in. each.

Weight, average: male, 7 2-16 lbs.; female, 7 1-16 lbs. Heaviest (male), 10 5-16 lbs.; lightest (male), 5 lbs. Average gain in weight, .31 oz.; greatest gain, 19 oz.; greatest loss, 21 oz.

Cord: average length, 24.3 in.; longest, 37 in.

Placenta: average weight, 21 oz.; heaviest, 36 oz.

Cord came off: average, 7 16-23 days; longest time, 14 + days; shortest, 4 days.

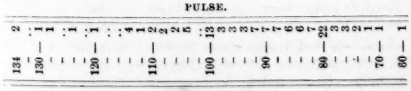
Ophthalmia occurred in two cases, and yielded readily to treatment with calomel dusted between the lids.

Puerperium: there was a mild cystitis in one case, relieved by catheterizing in a few days.

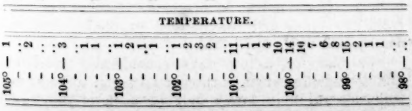
The catheter was required to relieve retention in 19 cases. The breasts were supported in 28 cases, and 7 cases had sore nipples. There occurred but one case of septic trouble which occasioned any anxiety, the one to which reference has already been made.

The following table gives a summary of the temperatures and pulse, and in connection therewith it should be stated that the number of high temperatures must not be considered as indicating an equal number of septic cases, for most of them were instances of a temporary rise from emotional or other neurotic disturbances — the passage of large fæcal masses and like trivial causes. The scope of this paper will not permit a more detailed analysis to substantiate this statement.

PULSE.



TEMPERATURE.



Uterus. Examination made before discharge from Hospital (not all examined). Position: left lateral version, 2; right lateral version, 1; anteflexion, 27; anteversion, 51; normal, 15. Cervix: right lateral laceration, 31; bilateral laceration, 30; stellate laceration, 3; normal, 34. Average depth of uterus, 3½ in.; greatest depth, 5 in.

CONDITION OF PERINEUM.

	Intact	Old tear
I paræ	22	..
II "	3	5
III "	1	7
IV "	1	2
VI "	..	1
VIII "	..	2
IX "	..	2
Total	26	19

Nicked 31, united 17, not united 14.

Lacerated and stitched 31, united 18, partially united 10, not united 3.

Average stay in Hospital after confinement, 14 + days; longest, 53 days.

Mortality: maternal, 0; infantile, 1 (a premature seven-months' child, which was born asphyxiated, but was resuscitated and lived three hours).

Stillbirths, 9. Seven of them were premature; and one of these, and another at full term, died in the process of artificial delivery, and craniotomy was done later. The ninth case was the child of CASE VIII, referred to later.

The mothers were all discharged well except, of course, some of them were debilitated. The children were all discharged well.

The following cases are referred to as presenting points of interest:

CASE I. Elizabeth B., I para, single. Confined February 19th, O. D. P. First stage, 8 h., 50 min.; second stage, 1 h., 35 min. Head delayed at perineum, and Largenwitch forceps applied by Dr. Boardman. Child had cephalhæmatoma. Mother and child discharged, well, March 3d.

CASE II. Elizabeth G., I para, single. Confined February 19th, O. L. A. First stage, 32 h. Largenwitch forceps applied at brim. Mother and child discharged, well, March 3d.

CASE III. Sophia F., I para, single. Confined February 22d, O. L. A. First stage, 25 h., 45 min. (membranes artificially ruptured); second stage, 1 h., 15 m. Head delayed at perineum, and short forceps applied by Dr. Mead. Mother and child discharged, well, March 6th.

CASE IV. Marion M. K., married, thirty-one years old, I para. Confined January 30th, O. D. P. First stage, 49 h., 10 m.; second stage, 2 h., 6 m. Pelvis: external conjugate 7¼ in.; crests 9½ in.; anterior superior spines, 8 in.; diagonal conjugate, 3 in. Membranes ruptured before entrance. For seventy-two hours had good pains; os not dilating, cervix taken up. Then had convulsion. Urine smoky; albumen, ⅛ %. Two more convulsions, partially controlled by ether. Etherized seventy-eight and one-half hours after beginning of labor; os a pin-hole. Dilation begun by Dr. Boardman with sponge-forceps at 2.10 P. M., and carried on with bone-forceps. Then manual dilation was begun: the hand was pushed with much difficulty through pelvis. A rest of fifteen minutes became necessary to recover strength and control in the hand, which was introduced again and the right foot seized and brought to vulva at 3.20 P.M. Traction on child and pressure over uterus were employed. Hot cloths to child; the fœtal heart beating from 160

to 180. Child born to shoulders easily, but the head was arrested at the brim. Traction and forceps proved unavailing, and at 3.55 the skull was punctured with Smellie's scissors just behind right ear. The cranioclast could not be applied and the blunt hook was introduced, and by traction with this the head was born at 4.16 P. M. A hot vinegar douche was given to prevent hæmorrhage. Retention till February 3d, requiring catheterization. Discharged, well, February 20th.

CASE V. Nellie M. K., VIII para, thirty-four years old, married. Labor began February 14th, at 7 A. M., at her home, where she had, as stated, a very profuse hæmorrhage. Physicians were summoned, and the vagina was tamponned with a sponge and a colpeurynter. Entered the hospital at 6.40 P. M, when she was extremely weak and blanched, with a variable pulse from 120 to 140. Fœtal heart could not be heard. The tampons were removed without inducing hæmorrhage, and the os found dilated to size of seven-eighths-inch and dilatable. Complete placenta prævia was determined. Without delay I commenced manual dilatation of the os. As the vagina was very capacious and the os dilatable, no ether was administered, as I thought the patient's chances would be better without it. She did not utter a word; indeed, scarcely gave an expression of distress during the operation, which was readily done. The right foot was seized. A little delay was occasioned by the obstruction to the version by the hand and head. Child born in thirty-five minutes after commencing manual dilation, and found to be macerated, about eight months old. Placenta and membranes came away entire. Mother discharged, well, March 12th.

CASE VI. Elmira B., I para, twenty-five years old, married. Confined March 13th, O. D. P. First stage, 20 h., 50 min.; second stage, 5 h., 26 min. Head was delayed for three hours on perineum, when it was delivered, face to pubes, by Dr. Paul. Mother and child discharged, well, March 26th.

CASE VII. Lizzie B. (col.), I para, thirty-five years old, married. Had multiple fibroids. No history of menorrhagia prior to pregnancy. One tumor, with a pedicle, the size of an orange, could be felt in the epigastrium. Three smaller ones, without pedicles, projected from the left of the uterus. None could be felt per vaginam. Twins were diagnosticated by the sounds of the fœtal hearts. The first presented S. L. A. Little progress having been made for eleven hours, when the os was about two-thirds dilated and the membranes ruptured, while the patient was partially under the influence of ether, I brought down the right foot. The sacrum rotated posteriorly to left, and left foot was released. The body continued to rotate, and came out back to pubes. The child was soon born, partially asphyxiated, but was readily resuscitated. The uterus remained large, and the membranes of the second child were ruptured artificially, when it presented O. D. P. Labor continued to be slow, with inefficient pains. Ether was again administered, and the second child easily extracted with Largenwitch's forceps. A slight post-partum hæmorrhage ensued. The patient had an uninterrupted convalescence. The uterus remained large, measuring four and one-half inches in depth at the final examination, when the tumors could hardly be felt. Mother and children discharged, well, March 26th.

CASE VIII. Mary C. S., twenty-eight years old, I para. Entered, in labor, March 14th, when fœtal heart was heard beating normally. Patient did not have severe pain, and her general condition presented nothing unusual. Two hours, forty-five minutes, after entrance, upon auscultation, no fœtal heart could be heard. In the interest of the child, I immediately proceeded to manual dilatation of the os, which was then one and one-half inches wide, and ruptured the membranes, giving escape to liquor, mixed with meconium. Largenwitch's forceps were applied at the brim, and the child was extracted, still-born. There was some little delay in getting the head through the superior strait. Possibly, had I at hand an axis-traction appliance, the result might have been more favorable, though the mixture of meconium with the amniotic fluid would indicate otherwise. The placenta was normal in appearance. An autopsy upon the child showed no cause for its death, but the head was not opened.

CASE IX. Matild R., I para, married, thirty-two years old. Labor began March 15th. Membranes ruptured, 2 A.M., March 16th. Brought to Hospital from East Cambridge, 8.40 P.M., March 18th, when I found the os fully dilated, with the head presenting, O. D. P. Fœtal heart, 178; mother considerably exhausted; pulse 108; temperature, 100.2°. Inspection of abdomen showed a marked prominence above, on left side, and another below the umbilicus, on right side, suggesting twins; but only one fœtal heart could be heard, on right side, below the umbilicus. A deep sulcus could be plainly defined between the two masses. Per vaginam, the os was found to be quite fully dilated, the anterior lip elongated and œdamatous; head presenting, O. D. P., and just entering brim. At 9.15, under ether, version was attempted; but I was unable to get my fingers beyond the line of the sulcus mentioned, which was due to a constriction at about the junction of the middle and lower third of the fundus. It will be remembered the membranes had ruptured at 2 A.M., March 16th, two days and more before. After continuing for some time, without effect, my efforts to pass this constriction, I withdrew my hand, and applied the Vienna forceps; but these slipped. Then I endeavored to use Reynolds's axis-traction rods; but the fenestræ of the forceps were so high and jammed at the brim, that I could not introduce them. Largenwitch's and Pajot's forceps were then tried with the same results. Meanwhile the patient's pulse had risen steadily to 160. The fœtal heart could no longer be heard, and craniotomy was begun. Just as a perforation had been made, the patient ceased to breathe, her face and extremities became black, and the pulse ran up to 170. She was immediately placed with head down and limbs elevated to the perpendicular, and stimulants were given subcutaneously. Considerable liquid ran from the mouth, presumably, too, from the trachea, and respiration was resumed. She was then replaced upon her back, with the head dependent, and delivery was soon accomplished by the cranioclast. Pulse 120. Ergotine was administered subcutaneously, and hot vinegar was injected into uterus. The uterus contracted slowly. There was but slight hæmorrhage after removal of placenta. She rallied well from the ether and convalesced gradually, and was discharged, well, April 7th.

She had for a few days considerable persistent and distressing cough, with coarse, moist, sibilant, and sonorous râles in lower half of back of lungs and

lower half of left front, with muco-purulent expectoration. An abscess formed in right forearm at the seat of the subcutaneous injection of ergotine. At the time of her discharge the uterus was still large, with a depth of five inches and a right lateral laceration of the cervix. Measurement of the pelvis gave between anterior superior spines, 8¾ in.; between crests, 9¾ in.; external conjugate, 6¾ in.; diagonal, 4 in.

THERAPEUTIC NIHILISM.[1]

BY MAURICE D. CLARKE, M.D., OF HAVERHILL.

It has been said, and perhaps not altogether without reason, that what Matthew Arnold would call the stream of tendency of modern medical thought was toward a therapeutic nihilism, — at least in Boston. Now, if by nihilism in therapeutics were meant anything like the chaos the word implies, the charge would carry with it its own refutal. But, if the men that are fond of the phrase therapeutic nihilism, mean by it that our creed is that of *laissez faire*, that our attitude by the bedside is one of folded hands, that, in short, we are willing waiters and not workers, we may well plead to the indictment.

Doubtless there is something captivating in the phrase itself, since it stands out in evident contrast to the general instinct of humanity, testified to no less by the domestic thoroughwort and saffron than by the munificent hospitals and dispensaries of a larger charity, to do something for the sick. Whether to do something is necessary or not, whether it is wise or not, whether it may not be even harmful, we all understand that it is expected of the physician, by common consent, to do something. How often, too, after having inquired as to the patient's bodily functions, regulated the diet, made suggestions as to bed and bedding, urged the importance of fresh air, and carefully attended to all the minute details for the patient's comfort, how often has it fallen to the lot of all of us to be confronted by the anxious friends with the inquiry, "But aren't you going to do something for him, doctor?" It is equally a matter of common knowledge that this widespread sentiment of the laity finds its echo among physicians, and that a large majority of them share the opinion that he fails of his duty and his privilege who neglects to do something. The alleged nihilist in therapeutics antagonizes, therefore, a rooted prejudice, not alone in the world at large, of whom nothing else need be expected, but among his own class, who might be presumed to exercise an intelligent judgment.

I remember very well that the somewhat jejune proceedings of the Section of General Medicine of the International Congress at Washington last fall were refreshed one afternoon by a discussion on therapeutics, in which varying views were presented with an approach to animation. No speaker, however, met with a heartier reception or provoked louder applause than a gentleman from Ohio, who announced himself as an enthusiastic believer in active medication and in the new drugs, and who pointed his remarks by the terse statement that, whereas rheumatic fever used to mean Dover's powder and six weeks, it now meant salicylic acid and six days. The man and the approval are typical. There can be no doubt that the popular current sets this way. It is the positive dogmatist that catches the public ear, and negations fail of attractiveness as they are difficult of proof.

I suppose there are few pursuits whose study and practice are characterized by so much zeal as that of the physician. The zealous medical student has become a proverb. And it is excess of zeal that has obscured and continues to obscure the exercise of a reasonable therapeutics. Each new drug that the botanist finds in the fields, the chemist in the retort, becomes to the ardent experimentalist an immediate specific for not one disease but many. It was so in the days of our fathers, it is so now, it is very likely to be so for some time to come. There is just dying from our midst the last of a generation that revered the lancet, and many of whom used to find their own materia medica in their neighboring woods and fields. The place their valued remedies held was usurped yesterday by antipyrin, the day before by cocaine, and will be to morrow by I know not what. It is stated in the current medical literature, with every appearance of truth, that cocaine, for example, is "good in," to use the every-day phrase, gastralgia, childbirth, seasickness, nasal hæmorrhage, hay fever, rhinitis, hæmoptysis, etc.; while antipyrin is very fortunately useful in spermotorrhœa, pertussis, enuresis, locomotor ataxia, rheumatism, migraine, neuralgia, seasickness, epilepsy, phthisis, hay fever, hysteria, lumbago, sciatica, diabetes, chorea and herpes zoster. But, alas, last week or last year the virtues of other drugs were lauded with equal assurance of their power. It is gravely stated in a dispensatory of the last century that "examples are related of very dangerous phthisis cured by the continued use" of a conserve of red roses; and the tincture of amber is extolled as "having incredible efficacy in all those distempers which proceed from weakness and relaxation, and in hypochondriacal, hysterical, and cold languid cases."

But there are other causes operative to favor indiscriminate therapeutics besides the popular clamor for dosage and the professional tendency to energetic medication. Not the least of these is the vast number of physicians annually sent out by the schools, which, in the nature of things, must include many excellent blacksmiths and tradesmen. "In this country," says the president of the American Medical Association in a recent address, "the multitude of medical schools, offering to the educated and uneducated, by low fees and short terms of study, inducements to become doctors, together with the almost universal desire among laborers to become doctors, has worked incalculable mischief. We have waited almost half a century for the desired reform to be effected, but our expectations have not been realized. Many excuses have been brought forward, but there is no excuse which will free the medical schools of this country from the responsibility of the odious defects of our system of medical education. The ratio of professional men in the United States to the population exceeds that of any other country in the civilized world. The ratio of practitioners of medicine to the population of the United States at present is about one to every five hundred and eighty, and there is very little danger that this ratio will be lessened. The supply will always equal the demand in spite of all difficulties." It is inevitable that the greater the rush to enter the profession the greater must be the proportion of those who, having but a smattering of general knowledge before matriculation and looking after graduation upon the practice of

[1] Read before the Massachusetts Medical Society, June 12, 1888, and recommended for publication by the Society.

medicine as a mere trade or means of livelihood, apply to it the same instincts and rules that govern the grocer's clerk and the carpenter's apprentice. It is inevitable that quinine and calomel should represent to them to-day the saw and scales they dropped yesterday, and that they should bring to the treatment of that complex variation from the normal we call disease the same confident energy they once employed in the building of fences and the weighing of sugar.

So far, indeed, as the representative school of New England, in which some of us have a personal interest and pride, is concerned, it is well understood that it is not open to criticism of this sort. I am not disposed to affirm, nor would it affirm, that its curriculum is complete or its methods incapable of improvement. I have heard the complaint in years past that its graduates had learned much about medicine, but had failed to learn how to practise it; that they had been taught the science and not the art of therapeutics; and that, when they were brought face to face with the every-day exigencies of private practice they found themselves at a loss. Now it may easily be that the student of the earlier days, riding his rounds with the country doctor, found something in the personal acquaintance with his instructor and his instructor's methods, in the daily elbow-touch with his parishioners, in the actual sharing of the interchanging hardships and rewards of a physician's life, — found something that the modern medical school, even with the aid of hospital and dispensary, fails in the nature of things to furnish him. And it may well be that the modern medical school would do wisely in adding to its scheme a few lectures upon the practical side of medicine before turning its graduates loose upon the community. But this is not saying that the modern medical school holds a wrong attitude toward therapeutics, if, inclining neither to the rhapsodies and vagaries of the enthusiast on the one hand nor to the idle fatalisms of the sceptic on the other, it aims to teach only such things as are believed to be truths in medicine, and leaves its students to deduce from them right conclusions.

The fact is that the treatment of the sick is very largely a matter of temperament. Some men are naturally disposed to look at disease from the standpoint of preventive medicine, some from that of hygiene, some with a reverence for the *vis medicatrix naturæ*, some with a belief in active medication. And the latter position is certainly the most attractive to the average medical man, and, in the presence of any serious illness, it is the most acceptable to the laity, in spite of the popularity of that therapeutic opera bouffe, homœopathy. Again, some men incline to run after new fashions, treating all diseases impartially and indefatigably with the newest discoverable drugs, and endeavoring to keep up with the "samples" of the manufacturing chemists; this is experimental therapeutics. Others, tor inert, perhaps, to shift for themselves, leave to these the practice of experiment, but borrow from them the suggestions their results afford; this may be called vicarious therapeutics. Others, again, settle back into the comfortable habit of always giving the same thing for the same disease, and thus, having once been in travail and delivered of a diagnosis, have nothing left to do but consult their books or their memories for the indicated remedy; this method of practice, I suppose by far the most common and certainly the most degrading of all, is routine therapeutics. There are a few physicians, however, who look upon each case as to a certain extent *sui generis*, and who bring to its relief not only the results of the experience of the past and the experiments of the present, but also a personal opinion of the needs of the particular case, and who, so far as they are let, endeavor to do what a sound training, an impartial judgment, and an active conscience command; and this seems to me rational therapeutics.

I am aware that what I have said has been said before, and much better than I can say it. In fact, something like it was said fifty years ago before this Society by Dr. Jacob Bigelow, whose later writings repeat and emphasize the same idea. "It is the part of rational medicine," said he, "to require evidence for what it admits and believes. The cumbrous fabric now called therapeutic science is, in a great measure, built up on the imperfect testimony of credulous, hasty, prejudiced, or incompetent witnesses. . . . The enormous polypharmacy of modern times is an excrescence on science, unsupported by any evidence of necessity or fitness; and of which the more complicated formulas are so arbitrary and useless, that if by any chance they should be forgotten, not one in a hundred of them would ever be re-invented. And as to the chronicles of cure of diseases that are not yet known to be curable, they are written, not in the pages of philosophical observers, but in the tomes of compilers, the crudities of journalists, and the columns of advertisers. . . . The exaggerated impressions now prevalent in the world, in regard to the powers of medicine, serve only to keep the profession and the public in a false position, to encourage imposture, to augment the number of candidates struggling for employment, to burden and disappoint the community already overtaxed, to lower the standard of professional character, and raise empirics to the level of honest and enlightened physicians."

There existed, indeed, in that day something that has fallen into disrepute in ours, and that is a belief in "heroic" medication. Active drugging does, to be sure, exist in plenty, but "heroism," in the sense of the exhibition of large quantities of nauseous medicine, no longer fetters the profession or frets the patient. Neither form of error, however, was spared by Dr. Bigelow's incisive pen. But this paper will not have altogether failed to be of service if it does no more than call attention, in these days of polypharmacy and superpharmacy, to truths which may have gained theoretical acceptance but failed of practical realization. The lesson cannot be said too often. No less an enthusiastic therapeutist than Roberts Bartholow has stated within three months, that "the science of therapeutics should be made more certain. This is a branch of medical study which is not cultivated as it should be, and a true knowledge of drug action is not widely enough diffused. The acquisition of this knowledge is greatly hindered by the mass of old prejudices which still cling to this science and impede its progress, like the barnacles on the hull of a ship. All this complexity and superfluity of olden times must be wiped away; at least two-thirds of the pharmacopœial preparations could be dispensed with, and scientific therapeutics would thereby be the gainer."

There appeared last fall a series of delightful reminiscences, personal and professional, from the pen of an honored member of this Society, whose ripe years

included a half-century of practice, from Laennec and Louis to Koch and Pasteur, who had seen the swift-handed surgery he was taught revolutionized by the discovery of ether, and who might have heard the then novel doctrine of the self-limitation of disease from the lips of its learned propounder. In his earlier days, to use his own words, "a doctor's call meant something. An emeto-cathartic inevitably followed the first visit, no matter what the disease might be." The doctor "was called to do something at once, and he generally did it." His "course was simple and easy. He had to be 'heroic' only with the lancet and heavy doses, and his responsibility was cancelled. If successful he had been lucky in hitting upon the right medicine; if unsuccessful, it was the patient's misfortune. . . . But, alas for the cautious or unheroic practitioner. His failures were accounted no better than homicides, if not indictable." When a man of this training and experience, at the close of fifty years of practice, publicly suggests as a fitting and self-desired inscription for his tombstone, "He cured the sick without drugs," it has occurred to me that we might be justified in occasionally neglecting to do something.

Yes, I repeat, if by therapeutic nihilism is meant that we are mere lookers-on in Vienna, none of us will admit that such is an attitude we keep or desire. But if it is charged, that in the presence of disease we maintain at once a reasonable faith and an honest scepticism; that we decline to fire at random and with all sorts of shot, in the childlike hope that Providence will kindly let us hit something; that, in short, we intend, as St. Paul advised the Thessalonians, to prove all things and hold fast that which is good,— then there are those among us, let us trust, who stand just there, unmoved by the ebb and flow of the tides of ignorance and prejudice. And why not? For, as Van Swieten said, a century and a half ago, in his Commentaries on the Aphorisms of Boërhaave, the learned professor of Leyden: "What will be the idea of the best Physician in future times we know not; but he is to be reckoned a good Physician now, who makes use of all the assistances by which, through the happiness of the present age, the art of Physick has been improved."

Clinical Memorandum.

UNUSUAL SUSCEPTIBILITY TO SEDATIVE REMEDIES.

BY ALBERT N. BLODGETT, M.D.

The following case, which recently came under my observation, presented some features of peculiar interest, and I venture to record it:

The patient, a lady of twenty-four, in good health and free from any unusual tendencies, consulted me in relation to an acute neuralgia affecting the distribution of the facial nerve on the left side. Quinine in considerable doses, averaging ten grains a day for a few days, was sufficient to entirely relieve the distress, and the patient was for a time free from all disturbance.

The lady was in the fifth month of pregnancy, and again consulted me on account of a burning and smarting sensation following urination, which was very frequent, and occasioned much suffering from a constant pain in the back, hips, and at the orifice of the urethra. The patient stated that she had been for a time a guest at a well-known watering-place, and that many of the ladies there were affected in a similar manner, and that the general opinion had been formed that this was in some way due to the waters, although many of the guests had been formerly at the same place, and had never had occasion to complain of the action of the waters. The pain and distress were so severe that my patient left the place, and after some delay, in the hope that the trouble would spontaneously subside, consulted me, as above stated.

I made no local examination, but prescribed a solution of bicarbonate of soda, containing to each teaspoonful two grains of potass. brom. sodii. brom. and chloral hydrate, with the addition of one-twentieth-gram of morphia. This solution was prepared at six o'clock in the evening, and the patient took one teaspoonful at half-past six, one at half-past eight, one at 2 A. M., and one at 8 A. M. She slept in the intervals, but awoke at the times stated, and, as she was alone, there is no other probable way in which the medicine could have been administered, except by her own hand. At eleven of the day, she rose and dressed and walked about her apartment, but feeling very drowsy and becoming rather frightened, she telegraphed for her husband, who came to her at four o'clock. She was at that time sleeping soundly, could with difficulty be wakened, and had no idea of the time, of her surroundings, or of the circumstances attending her condition. I was quickly summoned, and on reaching the patient found her dressed, seated in an arm-chair, and sleeping, with her head resting upon the back of a chair. Her color was good, there was no lividity of the skin, the breathing was easy, free, and natural, the pulse 72 and free, the skin a little cool, pupils dilated and sensitive, and the patient's condition was in no way otherwise changed from the appearances of ordinary healthy sleep. On trying to arouse her, there was no response to gentle measures, but by more vigorous methods she was sufficiently roused to open her eyes, to answer questions, and to give an account of her experiences. Two drops of the ordinary tincture of nux vomica were prepared in a little water, and the patient made to swallow it. She was then forced to walk, and after a little time could stand, and was able to move by herself. On being left alone, she at once sank down without regard to her situation, and was immediately asleep, and had to be violently roused. About five minutes after taking the nux vomica there was a distinct tetanic convulsion of a moderate degree of intensity, which was not, however, repeated. She now began to show increased animation, and was soon able to go about unassisted, and at my advice was taken to walk in the open air. She had eaten nothing during the entire day, and after a half-hour was able to take a good dinner, and from this time was entirely free from any soporific influence.

The patient said afterward that she had once before been similarly affected by a small amount of medicine given by a physician which contained bromides. She did not know the composition of the present medicine, and had no idea that it contained these articles. There was no appearance of hysteria, and the case seems to be one of unusual susceptibility to the action of a class of drugs which are usually supposed to be comparatively mild in character, and to be safe in large doses.

Reports of Societies.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

C. M. GREEN, M. D., SECRETARY.

MAY 12, 1888, the President, DR. WILLIAM L. RICHARDSON, in the chair.

DR. W. E. BOARDMAN read

A REPORT OF THE CASES DELIVERED AT THE BOSTON LYING-IN HOSPITAL DURING THE THREE MONTHS JANUARY 1ST TO APRIL 1ST, 1888.[1]

DR. LYMAN remarked that a large proportion of the cases had albuminuria, and asked if any of these cases presented serious symptoms. The reader replied that there were no symptoms in any case except one: that patient had eclampsia.

THE PRESIDENT said that fourteen years ago, when he supposed that albuminuria meant approaching eclampsia, he had made a series of observations bearing on this subject. The urine of every patient was drawn by catheter before labor, when time permitted, and examined: in the first thousand cases albumen was found in forty-three per cent.; but in the vast majority of this proportion nothing else was found, and the albumen disappeared soon after labor.

DR. EDWARD REYNOLDS said: I have been especially interested by two points in Dr. Boardman's report. He finds, if I understood him correctly, that in seventy-seven primiparæ the average duration of the second stage of labor was only one and one-quarter hours. This is somewhat shorter than is usually reported, and is the more remarkable from the fact that in a hospital where the house physicians do not apply forceps unless in the presence of the visiting physician, the length of the second stage is always prolonged in operative cases by the time consumed in sending for him. Should further statistics support this average, it would lend additional emphasis to the opinion held, I think, by most of us, that a three-hour second stage is long enough for any woman, and that if at the end of two hours the head is within the pelvis, and is not advancing, it is better to apply forceps at once in advance of the coming exhaustion, rather than to delay until mother and child are in a precarious condition; and I think it is evident that in so doing we are following rather than supplanting nature, for if the powers of mother and child have been arranged for resisting the strain of the normal second stage of from one to two hours, it is plain that any considerable further delay must imply a drain upon that surplus strength, the expenditure of which results always in exhaustion.

I wish further to suggest a remedy for the difficulty which Dr. Boardman found in adjusting my axis-traction rods to the forceps in one case. As a rule nothing is easier than this attachment, but in a few of those cases in which the head is free above the brim of a transversely contracted pelvis I have found the fenestræ so high and the blades so closely approximated to the pelvic wall that there was not sufficient space for the passage of the rods; but, if in such a case the forceps be unlocked, the fenestræ are found to be then within reach, and the attachment of the rods again becomes a perfectly easy matter. I have now used the rods in five such cases, and have seen them used in equally difficult cases by two other physicians, neither of whom had ever applied them before, and in no case was there any real difficulty in attaching them. I cannot help thinking that by this expedient they can be applied in any case which is at all suitable for forceps.

DR. J. P. REYNOLDS reported some cases of interest.

DR. SINCLAIR thought the reader should be thanked for his teachings of early delivery in placenta prævia and eclampsia.

DR. FIFIELD, present by invitation, asked whether any members had had experience with veratrum viride in eclampsia. Jewett, of Brooklyn, had lately recommended the drug, and had found that subcutaneous injections of 15, 25, or 30 minims had a wonderful effect in quieting the convulsions. Some years ago Dr. James Sullivan, of San Francisco, recommended veratum viride combined with grain one-quarter of morphia: Dr. Fifield himself had never known the drug to be used here.

DR. MINOT asked if venesection had disappeared from among our various methods of treating eclampsia: he had had occasion to bleed on several occasions, and thought bleeding a valuable expedient in some cases. Certainly a large amount of urea might be removed by the bleeding; and if the blood is filled with poison, the removal of much of it must be a desirable thing.

DR. J. P. REYNOLDS queried whether a single bleeding might not be advisable when in primiparæ there are difficulties of dilatation: would not dilatation be facilitated thereby?

DR. C. E. STEDMAN had, in early years, practised venesection with success, even in one desperate case in which the patient was already anæmic, and who, he believed, was saved by free bleeding. The indications he had followed were headache and a full bounding pulse: he bled to twelve or sixteen ounces. Venesection was now largely superseded by anæsthetics.

DR. FIFIELD remarked that if done at all bleeding should be done freely. The rapidity of the pulse before a convulsion had probably led to venesection, and then to opium; but veratrum viride will also slow the pulse, and ought to give good results.

DR. BLAKE suggested that in successful results attributed to bleeding or veratrum viride the happy issue was in great measure due to the termination of the labor.

THE PRESIDENT said that those who bleed in eclampsia use other treatment at the same time, and he believed the success was due to the other treatment: the same was true of veratrum viride. He had seen many cases of eclampsia in consultation practice; but only one had proved fatal, and that one was bled.

DR. LYMAN said that before ether was known opium was looked upon as a bad thing in eclampsia, and the convulsions were treated by bleeding: then came ether. Then the profession, in New York especially, gave morphia: now come morphia and veratrum viride in combination. All these remedies are probably good, singly or in combination according to the case: there is no one remedy for all forms and conditions of eclampsia.

[1] See page 196 of the Journal.

BRITISH MEDICAL ASSOCIATION.

GLASGOW MEETING, AUGUST 7-10, 1888.

DR. J. T. BANKS, of Dublin, the retiring president, occupied the Chair, and opened the 56th annual meeting with a few remarks. He congratulated the association on their meeting in Glasgow, now become the second city of the empire, and assured them a hospitable reception in the ancient University. The past year had been one of prosperity in the association. One year ago when he became president the membership was 11,000; now it is 12,000. He congratulated the association heartily on the selection of Prof. W. T. Gairdner, of Glasgow, as president for the present year, and introduced that gentleman to the association.

PROFESSOR GAIRDNER, on taking the Chair, said that he would not boast on putting on the armor; it was not the time. It was the occasion, however, for Professor Banks to boast, for his work had been accomplished. Professor Gairdner said that though it was too early to boast, it was not too soon to be thankful for the honor conferred on him by the association in electing him to the Chair.

Council reported new branches, as follows: Perthshire, Nova Scotia, and Cape Town, South Africa. Two others in Tasmania and Malta are about to be formed. The number of members on the register last year was 11,107. During the year 359 resigned, 132 died, 1649 new members were elected. Present number, 12,265. Income £28,680; expenditure £26,060 17*s* 9*d*. Surplus £1,619 2*s* 7*d*.

Inebriates Legislative Committee made a lengthy and encouraging report, which was adopted. They had changed the name of the act from Habitual Drunkards' Act to Inebriates' Act. Many declined to be called habitual drunkards, yet acknowledging themselves inebriates, and many were not habitual in their dissipation, but periodic. The legislation is now permanent in place of the temporary act for ten years which has just expired. In Great Britain, as well as in the United States and in the colonies the move towards this object has been originated among medical men.

Services were held in the old cathedral, which was crowded to its utmost with doctors, who sang the One Hundredth Psalm with a will. The sermon, by Principal Caird, was a counterblast to modern materialism. He dwelt at some length on the arguments to be deduced from death and the loss of reason, and concluded by two objections absolutely fatal to the materialistic theory of the relation of matter to life. First, the theory was in irreconcilable opposition to the very law of the conservation of the energy on which it professed to rest. Further, the fundamental objection to all material theories was that they begged the question at issue.

A resolution, stating it to be the opinion of the association that Irish and Scotch diplomas should possess the same privileges as diplomas from other divisions of the United Kingdom, which was brought up at the Dublin meeting one year ago, passed unanimously.

PROF. W. T. GAIRDNER, of Glasgow, then delivered

THE PRESIDENT'S ADDRESS.

He took for his subject "The Physician as Naturalist." In no other language he said, besides our own has the title physician or physicist survived and threatened to engulf the term medicine, the art of healing. The physician is regarded as a student of nature. It is hard to find where this idea first took shape.

For a series of interminable ages, from the time, perhaps, of Hippocrates downwards to what we call the Dark or Middle Ages, the tradition has continually existed that the healer or physician of the highest class ought to be in every sense of the word a student of nature, a naturalist, or perhaps a man of science, and that he is trustworthy as a healer or physician chiefly in proportion to the confidence reposed in him as a naturalist, that is a humble, reverential and exact follower or student of nature. That magnificent opening of "Novum Organum" describes man as the minister and interpreter of nature. He must be, according to Hippocrates, the servant of nature. Hippocrates was the first to observe nature and her works. This term, servant of nature, according to Galen, will only apply to the true healer, and not to the mere druggist, who might be called the enemy and adversary of nature and the sick.

The physician of the middle ages, so far as we can judge of him from literature, while retaining the name, was in a very small degree, if at all, cultivated according to the type. In fact, anything like original research was dangerous on his part, and liable to be punished by imprisonment, perhaps the faggot. I apprehend that the physician of the middle of the seventeenth century in France unless caricatured out of all recognition by Molière, must have been altogether the most stupid, pompous and brainless formalist that ever in any age practiced the art under a learned title. Even down to the last century men of the type of Minacre and Cairns in the Royal College of Physicians in London, greatly predominated over the men of Science as exemplified by William Harvey. The physician *naturæ studiosus* was in danger of being wiped out, but the revival came, and in the Scottish universities chemistry as a science, and perhaps botany have never lost a distinctive place in the medical curriculum from that day to this. I wish I could say the same of physics proper, natural philosophy as we call it, which has been, comparatively speaking, left out in the cold. During the one hundred years past Scottish universities have been, with more or less success, laboring, on the whole, to build up again the great and noble idea of the physician as naturæ studiosus, a nature seeker, *natur forscher*. It has been claimed that the spirit of modern science is ungenial and hard, even pitiless, and therefore not at all fitted for the ministrations of humanity, that it tends to make the suffering man a mere case, a thing to be observed and noted rather than a man of like passions with ourselves, and therefore to be treated with consideration and sympathy. There may be just a grain of truth in this, yet all the evils inflicted on suffering humanity by the physician as scientist have been but a drop in the bucket as compared with those which have sprung from the too lavish adoption of traditions in which there never was any trace of the scientific spirit at all.

When we consider that the most of the great advances of the present day, stethoscope, microscope, laryngoscope, ophthalmoscope, sphygmograph and electricity involve applications of pure physics, which

are neither very remote from practice or yet very easily mastered by the beginner, and that in the case of electricity and other physical reagents, even heat and cold, we are every day extending the domain of these sciences in therapeutics, and still more, perhaps, in preventive medicine and sanitary science, their claim for an extended recognition in teaching seems to be enormously enhanced. I am persuaded that the physical laboratory will become an absolutely essential preliminary step in the education of the physician of of the future, and that those who have not undergone this training will be hopelessly distanced in the race.

He lamented the unprepared state in which most boys and young men leave school as regards the most elementary truths of physical science and the observation of nature. Twelve or fifteen hours per week are devoted to classics, and two or three hours are considered sufficient for science in most schools. This renders more than ordinary care necessary to insure at the very beginning of the medical education the preparation in physics which will shortly become all and in all to the true physician.

No child is too young to take in the a, b, c of science, the manner how and the reason why, as Kingsley puts it. Children should not be taken from the age of six from learning of nature and have their noses poked into books and papers for ten long years, till their eyes become myopic and their brains suffer a corresponding deformity.

Religio medici was next considered. *Ubi tres medici, duo athei*, is a proverb, the source of which it is impossible to trace, but which is evidently the growth of the mediæval period. This proverb is a calumny and a reproach. Yet to be accused of atheism in the Middle Ages might be the reverse of a real reproach to any man or set of men; to be tabooed for atheism has often been a compliment of the highest order.

The physician of the future, he believed, would be much more, instead of less, inclined to make his study of the Bible than hitherto. He will study it in the spirit of modern scientific freedom and historical research, and thus only, it seemed to the speaker, that the reconciliation of science and religion can ever be brought about.

PROGRESS OF SURGERY DURING THE LAST HALF CENTURY.

SIR GEORGE H. B. MACLEOD, of Glasgow, Scotland, took for his text in his address on Surgery the advances made during the reign of Queen Victoria. It was with pardonable pride that they spoke of medical science in this northern land and with no department of the one great and indivisible art have the names of Scotchmen been more honorably associated than with that which he represented. He cited the names of Lowe, Cullen, Black, Hope, Gregory, Graham, Granville, Pattison, Ure, Hooker. Balfour, Lister. The immortal Hunters were educated here. While in England 1 in 5,000 attend the Universities, in Scotland 1 in 500 avail themselves of this privilege. Of the 1,639 medical students registered last year in Great Britain, 666 belonged to the Scottish schools. After briefly sketching the works of the great masters in anatomy previous to 1847, Sir George took up the subject of "Anæsthetics and Antiseptics," which he considered to be the most distinguishing features of the period under review. They are both "epoch-making" discoveries. Each has done almost as much for surgery as the discovery of hemostatics, and when combined, may, I think, be said to excel even steam and electricity in their gracious benefits to mankind. Velpeau said in 1839, "All research for any agent to destroy pain in operations is a mere chimera and unworthy of further consideration." This was seventeen years before the great discovery. Suddenly, however, the riddle was solved, and by one who remembering the experiments of Humphrey Davy with nitrous oxide and sulphuric ether, dimly perceived the use they might be put to in surgery. Many of us can still recall the enthusiasm which that discovery evoked and the unbounded anticipations which it suggested. Chloroform was soon brought into use by Sir James Simpson. The relative merits of these and of other anæsthetics have not yet been determined. He himself, after fairly trying most of the agents in use, employs chloroform. He gives it in all cases and has never had an accident but once, when giving it to an epileptic he took a fit and died. It is unrivaled for speed and ease in giving. That it needs no apparatus but a towel is a great argument in its favor. He never measures the quantity used but exhibits it freely and takes the color of the lips and the respiration as his chief guides. Making the patient count at the beginning of the administration is a most valuable aid; and Nelaton's inversion of the body with artificial respiration is the surest mode of resuscitation in danger from failure of the heart. Anæsthesia has changed the whole aspect of surgery. "The lion heart" is now no more necessary for a surgeon. It was in this school that antiseptic surgery was first practically applied, so he may be pardoned if he speaks warmly and enthusiastically of that invaluable discovery. The fundamental principles on which it rests remain unassailable, and it has lead to practical results, not alone in its immediate effects, but in the discussions and and studies which it has produced, which have in an extraordinary degree, widened the domain of our art, diminished the sufferings, and saved innumerable human beings.

The study of micro-organisms which a quarter of a century ago were mere microscopic curiosities, has become a great and enthralling pursuit and has opened up a field of practical application, not in medicine and surgery alone, but hygiene and public health, though the present tendency is perhaps to exaggerate the influence of microbes. What was lately but a dream is capable of realization in the near future; namely, that every zymotic disease and all those which owe their origin to putrefaction and fermentation will finally be stamped out.

Aseptic surgery in its practical application has amazingly augmented the value of the surgeon's services. Pure drainage and entire rest, both physical and physiological, demand the attention of the surgeon. Of the many germicides he prefers the bichloride. Dry and elastic dressings have been most valuable improvements.

Hospital organization, owing to the misfortunes of the Crimean War and the cholera epidemic of 1852, have received more attention during the past twenty-five years than during the previous seventy-five years. That intra-mural hospitals are on their trial cannot be doubted. The smaller establishments in the rural districts meet the modern ideas more nearly than the

huge piles without space or pure air, which we find in the cities. Much good has been done during late years by the use of the ambulance wagon, after the American method, for the care of the sick and the instruction of the many in the care of the wounded.

To further abridge his address would be but to mention a long list of improvements.

An address before the general sessions which attracted unusual attention was that on

BRAIN SURGERY,

by William MacEwen, M.D., of Glasgow.

He said lesions of the head had at all times held a prominent place in the annals of surgery. The operations of primitive surgery were simple and chiefly directed to the superficial parts, the skull and its membranes. The brain inspired fear, as it was intimately associated with the seat of life, gave lodgement in its recesses to the soul and was surrounded with all the mysticism which speculative philosophy inculcated. From the day of Pott to our own, there seemed to be a growing conviction not only of the impotence but the positive harmfulness of active interference, so that the trephine was regarded as an almost obsolete instrument. Such was the state of surgery till 1870. It was necessary first to adopt means whereby immunity from the inflammation which so constantly attended brain lesions could be secured, and secondly, to endeavor to gain a better physiological knowledge hoping that light might be shed upon the localization of cerebral lesions.

The extended physiological knowledge obtained by the untiring efforts of such workers as Hughlings Jackson, Fritsch, Hitzig, and Ferrier, enabled cerebral lesions to be more accurately localized, while experience showed that by preserving aseptic the parts operated on, surgical interference could be robbed of its chief danger.

Here the history of a case was given in which the symptoms of focal cerebral disease led to diagnosis of lesion in Broca's lobe. This, unfortunately, had a fatal termination owing to the refusal of the parents to permit the operation, which was demonstrated after death, would have saved the life of the patient.

Dr. MacEwen then gave details of other cases, passing from the consideration of the Initial History of Cerebral Surgery to the Consideration of a Few Points regarding the Present Aspect of Cerebral Surgery.

His answer to the question whether the localizing motor phenomena are reliable guides to the diagnosis of cerebral lesions situated in the motor cortex, is unhesitatingly affirmative. Each case, however, must be studied upon its own merits. The various points of reliance should be tested wherever possible, by instruments of precision. When injury has been inflicted on the surface of the cerebrum, followed by plastic effusion and cicatricial formation, the superficial substance is apt to become soldered to the membranes, which in turn may become soldered to the skull, or if they should be detached the brain may become directly adherent to the bone by means of cicatricial adhesion. Thus the surface of the brain becomes anchored to its rigid walls. The gray matter of the cortex immediately surrounding the cicatrix is apt to become unstable, and traumatic epilepsy has thus resulted. If the cortical irritation be continued, encephalitis is sometimes produced and operation has occasionally hastened the fatal issue, encephalitis rapidly becoming general.

In the majority of instances the surgeon makes no effort to fill the gap caused by osseous defects in the cranial wall. Since 1873, he has carefully preserved the portions removed from the skull, rendered them aseptic, divided into minute fragments, and re implanted. These have grown wherever there has been immunity from suppuration. A most interesting case operated on four years ago was shown at the demonstration in the Royal Infirmary. Nearly one-half the left anterior portion of the skull was broken into fragments, which were mixed with brain-substance, shreds of membrane, hair, *débris* of lime and blood. The pieces of bone were all made aseptic, replaced, and, with the exception of two fragments, grew and now form a firm, osseous wall.

Briefly alluding to another portion of the nervous system, he said that certain sensory and motor phenomena due to lesions within the spinal canal are amenable to operations which are attended by a measure of success, which offers a prospect of relief to a class of sufferers hitherto regarded as hopeless. The spinal membranes and cord itself can be exposed, and neoplasms and encroachments upon the lumen of the canal may be removed therefrom without unduly hazarding life. In 1883, he first successfully operated thus for the relief of paraplegia due to angular curvature of the spine.

In conclusion, the distinguished speaker called attention to the fact that the same phenomena by which we are now able to recognize and locate cerebral lesions were exhibited by patients who came under the eye of our surgical predecessors, who were so hampered by the inculcated physiological dogma of the time that the facts were reflected from their brain as objects from a mirror, and their true significance never dawned upon them. There are all around us phenomena, each with its hidden truth obtrusively impressing our senses, and how do we fail to read their riddle?

A number of the patients operated upon by Dr. MacEwen were in attendance for examination by any of the members. All, both juveniles and adults, were in good health, the latter all able to be at work.

Dr. James C. Howden, of the Sunnyside Asylum, Montrose, the President of the Section of Psychology, in his address, touched on the lesson derived from the few cases of insanity in which surgical interference has resulted in recovery, and proceeded to discuss the medical and mental treatment of insanity. Insanity was a group of diseases of the most varied kind. Experimental teaching had done much good in showing the mischief of indiscriminate drugging, but it was apt to breed a fatalistic turn of mind. The importance of treating bodily diseases was duly recognized, and the individualization of patients and special medical treatment insisted upon. The training of attendants and nurses was now being carefully attended to. The moral treatment, though somewhat unfortunate in its sound, being somewhat Pharasaical, and implying the possibility of other means being immoral, was of much benefit, and there were few cases in which it could not, some time or other, be made use of. He preferred to call it mental treatment, as it was the effect of mental influence. It seeks to remove the patient as early as possible from the mental environments which produce or aggravate the disease. It seeks to distract the mind from

morbid feelings and thoughts, and seeks to occupy it with healthy employment and recreation. The prevention of insanity in its relation to civilization was discussed. The survival of the fittest would tend to eliminate insanity, and the highest civilization was the state which encouraged insanity by protecting the weak, and, at the same time, causing overpressure and injury to the brain. If the gospel of health could reach a civilized people, it would have a powerful influence in the prevention of insanity. He would look forward to the time when the brain would be so highly organized that false judgment and sophistical reasoning would be impossible, except among the imbeciles of the race, and that, perhaps, a perfect state of health would be reached when men would be unconscious of themselves. He then recounted the changes which had occurred in the Scottish asylums during the past thirty-five years.

CLASSIFICATION OF DISEASE BY MEANS OF COMPARATIVE NOSOLOGY

was the subject of the address in medicine, by DR. CLIFFORD ALLBUTT, of Leeds. He thought disease should be classified by affinity which should supersede our present system of classification by clinical features. The advances made in comparative nosology, a term rarely heard, have been less than should have been the case.

As the nervous system developes in the higher animals, all diseases must take on a change of type, become more systematic, more complex, more sympathetic with disorder elsewhere; must tend, in a word, to primary or secondary neuroses. The diseases of the lower races of men will differ, and, as a matter of fact, do differ from those of the higher.

In classification by affinity four methods of inquiry must be followed; namely, the hereditary, historical, geographical, and experimental. In the records of hereditary disease we find that observation has been almost wholly directed to the detection of the recurrence of the same form of malady in one family tree; but if we desire a scheme of all the fatal and non-fatal diseases found in the same stock, it cannot be furnished. The inherent tendency of organisms to vary "Nature's bent for inequality," in the words of Matthew Arnold, is well known, if not yet explained.

The historical method leads to the philosophical in all studies, and no less in nosology: unhappily, this study has not yet emerged from the prehistoric period. In the comparison of human disease as it now exists, with its past history, we must remember that in the ruder stages of man morbid variations were constantly eliminated in the struggle for existence. But we begin to see the converse of this condition when human society attained a high degree of development. Natural selection is modified by deliberate counterplots: bad strains are preserved, which, in former times, would have died out. However, bodily improvement may be sought at the cost of the higher mental and effective organizations. Dr. Allbutt gave an interesting *résumé* of racial characteristics in disease. He finds the Dutch rarely the subjects of irritative neuroses; the Scotch, likewise, have a relative rarity of purely nervous diseases, but cancer is more common in Cumberland than in any other of the border counties. Apoplexy and palsy are more common among white than colored people, and among the Germans than the Irish. Among the Indians, diseases of the nervous and circulatory systems are rare, but scrofula and consumption common. The Englishman is patient and courageous under sickness, the Scotchman lies down and gives way under the same conditions, while the Irish Celt is fired with alarm, and magnifies by his vivid imagination both his sickness and recovery. The study of racial peculiarities is intensely interesting, but the variations are known to be manifold: the Arab is not liable to tetanus: the poison of beri-beri does not attack Europeans until they have lived in its district for a length of time: the resistance of negroes to yellow fever is common, as is also their relative immunity from sunstroke and paludal fevers.

In speaking of the geographical method, Dr. Allbutt queried: How have the morbid varieties of man arisen? We can only answer in general terms that we must have especial regard to areas long undisturbed, and, as we must not confound nations with races, we must not confound kingdoms with physiological areas. As in various families, so in various regions, we must work out in each not only the prevalence of disease taken singly, but more especially the schedules of its diseases, noting both coexistence and respective degrees of intensity.

The experimental method will teach us that drugs and poisons will not vary in their clinical effects on living beings by gradual augmentation of differences, but by leaps and bounds, as musical scales respond to scales of vibration. It teaches us that clinical types can be no basis of nosological classification, as we rise higher and higher in the plains of function we enlarge the office of inhibition.

SIR WILLIAM AITKEN, professor of pathology in the Army Medical School at Netly, made the address before the Section on

PATHOLOGY.

Sir William took peculiar gratification in being asked to fill this Chair, on account of his previous connection with Glasgow University. In pathology we have a link which connects us with the science of medicine as distinguished from the art or practice of it; but pathology must be studied as a branch of biology in the widest acceptation of the term; and when medicine was thus thought of as a pure science it implied a "pathology" which had no more necessary subservience to practical ends than zoology or botany. Research is essentially the method of working in pathology. The establishment of the "cell theory" in physiology was swiftly followed by a "cellular pathology" as its logical counterpart. It is unquestionably to Virchow that is owed the great advance by which histology came to take first place as aid to elemental pathology. The direction in which the greatest advances had been made in this section during the present era consisted, (1) in a better appreciation of the "processes of disease," (2) in an increasing importance attached to morbid anatomy, physiology and etiology.

He referred to the introduction of the clinical thermometer, which up to 1864 had no home in England. Even now, with all its usefulness, the theometric observation of disease is but in its infancy, or at least in its youth.

The doctrine of evolution in biology had acquired an importance which he believed especially capable of illustrating the pathology of constitutional diseases.

The doctrine in pathology must be accepted as a part of biology that the laws of variation are ever operative in connection with the origin and development of disease. There are good grounds for believing that new diseases as well as old are in constantly progressive stages of development, although the slowness of their evolution may make us unable to appreciate them.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT.

SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.[1]

ALBERT N. BLODGETT, M.D., SECRETARY.

MEETING, February 8, 1888.

DR. MORTON PRINCE read a paper on

OPHTHALMOPLEGIA EXTERNA.

DR. O. F. WADSWORTH said: I listened with a good deal of interest to Dr. Prince's paper. I would like to say that, while Hutchinson was the first to propose the name of "ophthalmoplegia externa," and was the first to publish a case in which the nuclei were shown to be the seat of the affection, Graefe presented a series of these cases some ten years earlier. He was at first disposed to consider that there was a tumor; but afterwards gave that up, and supposed some central lesion, although he did not know what it was. I think there have been a number of cases observed besides those which Dr. Prince mentions. The term "ophthalmoplegia externa" was proposed by Hutchinson, and was used by him in contradistinction to another class of cases which he called "ophthalmoplegia interna," in which the internal muscles, the sphincter iridis, and ciliary muscle, and, as he supposed, also the dilatator iridis, were affected only. It is doubtful, perhaps, whether the dilatator was affected in his cases. He referred the latter affection to disease of the ciliary ganglion.

It is interesting to note, however, that although Hutchinson made this distinction in a large proportion of the series of cases that he reported as ophthalmoplegia externa, and in the one case that came to autopsy, where the nuclear affection was demonstrated, the iris and ciliary muscle were affected. Although there are a certain number of cases where only the external muscles are affected without affection of the ciliary muscle and iris, and that condition has remained for a very long time (Graefe stated that he had seen one where for the greater part of the patient's life that condition existed), yet in the large proportion of cases the iris and ciliary muscles become affected, or other cerebral nerves, or nerves of the spinal cord.

Even after the external ophthalmoplegia has existed for a long time without change, other changes have been observed to take place. Then there are certain cases which recover. I reported a case a year or two ago where, with not complete, but partial paralysis of most of the external muscles in both eyes, without affection of the iris and ciliary muscle, and with optic neuritis, the muscles recovered their function entirely. That was a case apparently due to lead poisoning.

It seems to me that the less complicated cases of ophthalmoplegia externa must be considered, most of them at least, as with very little doubt nuclear; unless, as Dr. Prince suggests, we consider that there is a cortical lesion; and we have no knowledge by which at present, we can make cortical localization for the movements of the muscles of the eye. It is very difficult to understand how complete paralysis of those fibres in a nerve-trunk which supply most of the muscles which that nerve goes to can occur, and other nerve fibres, going to other muscles, and running in that trunk, should be entirely unaffected, if the affection is one involving the nerve-trunk; and such cases are those of pure ophthalmoplegia externa. If it was only the oculo-motor that was affected, we might suppose with some probability, that, as has been shown in certain cases, the fibres of the ciliary muscle and iris run through the abducens; but when the abducens as well as the oculo-motor, or the muscle supplied by the abducens as well as the muscles supplied by the oculo-motor are affected, this explanation would not be valid.

Some of the cases with complete paralysis of most of the ocular muscles show immunity of other muscles besides those of the iris and ciliary body which are supplied by the same nerve. For instance, I showed at the Improvement Society, some eight or ten years ago, a man with locomotor ataxia, who had complete paralysis of all the muscles supplied by the oculo-motor, and that on both sides, including the iris and ciliary muscle, except the muscles that raised the upper lid. These latter muscles on both sides were unimpaired, apparently, in their function. At that time I was not familiar with the nuclear affections, but I think now that there can be little doubt that there was in that case an affection of the nuclei; I cannot understand how all the other fibres should have been completely paralyzed and the fibres going to the levators unaffected, unless the trouble were at a spot behind the place where the fibres become joined.

I should like to mention one other case where the ophthalmoplegia externa was complicated with other affections. It was a young man from Keene, N. H., whom I saw four or five years ago, who fell while getting from a sleigh, striking on the back of his head. He went home without assistance. He soon had double vision and dizziness (probably in consequence of the double vision), persistent headache and vomiting. He was somewhat somnolent and there was some mental impairment. At the time I saw him there was paralysis of a number of the muscles of both eyes, muscles supplied by different nerves. He finally died, and Dr. Bridgman sent me a report of the autopsy, in which were found a number of spots of softening, chiefly in the region of the pons but also in one or two other places in the brain. My probable diagnosis had been tumor in the region of the pons, and it is quite possible, I think, in the absence of microscopic examination, that the spots of softening were due to broken-down glioma. I have never myself seen a case of pure ophthalmoplegia externa that lasted for any length of time under observation.

I cannot give all the references, but I think there have been a number of cases in which the nuclei or parts in their immediate neighborhood were shown to be diseased, and where ophthalmoplegia had existed together with other symptoms.

DR. J. J. PUTNAM: I will detain the Society but a moment. I think this class of cases is one of extreme interest. We find that the third nerve is not a single organ, but that many nerve cells lie side by side which have different functions and different susceptibilities.

[1] Concluded from Vol. cxviii, page 431.

Furthermore, the fibres which make up the nerve do not all come from the same nucleus. Take, for example, those fibres of the third pair, which raise the upper lid. A portion of them seem without question to come from groups which lie lower down than the primary nucleus to which Dr. Prince has alluded.

It is difficult to criticise or say very much about a paper like Dr. Prince's, which one would need to examine previously in detail. This I hope we shall have the opportunity of doing in print. I will simply add what little I have to say which seems to throw any light upon the subject. I have seen a number of cases of this sort, none of them perhaps pure cases. It seems to me sufficiently evident from what has been said that the pure cases of paralysis of all the external muscles of the eye, without implication of any of the internal muscles, and without any symptoms which would indicate that other portions of the nervous tissues were affected, are very rare, although they certainly do seem to exist, and the patients carry the symptoms, as has been said, through life occasionally, certainly for very long periods.

One point of etiology seems to be interesting out of many interesting points. As Dr. Prince said, I think the original cases reported by Hutchinson were supposed to be of syphilitic origin, and this group of symptoms has rather borne the stigma of syphilis on it that seems to be undeserved. A number of cases have been reported as following diphtheria, and that, it seems to me, opens an etiology of great practical importance. These diphtheritic cases are probably cases of multiple neuritis, of which we have heard so much of late. Of that same origin, as I believe, was a case of partial oculo-paralysis with other symptoms pointing to lead poisoning, which I have had an opportunity to observe during the past year, and various other cases which have been reported from time to time. In fact, in quite a number of cases of multiple neuritis, reference has been made to paralysis, partial or complete, of various ocular muscles. A case has been recently reported also, where both facial nerves were diseased.

I have also seen within the past year a patient exhibiting partial paralysis of all the external muscles of both eyes, with almost complete, if not complete preservation of accommodation. The rest of the muscular system was not paralyzed, but became very weak, so that she arose from her chair with difficulty and came to my office attended by a friend, and she had sensory symptoms such as one sees in cases of multiple neuritis of moderate severity. These symptoms gradually improved I think, during the time that I had an opportunity of observing the case, six months or more, but they had by no means passed away, and the case had already lasted some months before I saw it. She told me, moreover, that she had had a similar attack some two or three years before, of shorter duration. It seems to me impossible that we should assume, in such a case as this, that the various processes were of central origin. It seems to me more probable that the whole group of symptoms were due to multiple neuritis, and so I think with some of the other cases.

I have also recently had an opportunity to see an exceedingly interesting case which may have been one, possibly, of hæmorrhage into the pons; at any rate, where the muscles of the eye, external and internal, were involved.

There is one other point in reference to what Dr. Wadsworth has said. It is difficult to see how a portion of a nerve can be pressed upon without the rest of the nerve being involved. Referring again to the case which Dr. Prince mentioned where the only paralysis spoken of during life, I think absolutely the only one, was the loss of movement upward, and where a gummatous tumor was found destroying both of the third nerves in their passage from the crus cerebri; it seems to me that this paralysis upward is observed much more often and much more fully than the loss of lateral motion. At any rate, I have seen recently two cases, one of them in a patient whom I saw to-day at the hospital, where both of the third nerves were affected and no other nerves apparently, but in both cases, and particularly in the one that I saw to-day, although the lateral motions are now present to a very considerable degree, there is entire loss, so far as I could see, of motion either upward or downward.

DR. P. C. KNAPP said: I have listened with a great deal of interest to the paper of Dr. Prince, because I think that the whole subject of ophthalmoplegia externa and the question of disease of the nuclei in the bulb is of very great interest, as filling up the gap in our knowledge of the diseases of the motor tract, especially in its relations to the other diseases of the motor tract lower down, such as progressive muscular atrophy and bulbar paralysis proper.

It seems to me, too, that these cases can be brought into more or less relation with the diseases of the motor tract lower down. We know that in affections involving the limbs, for instance, we may have disease in the cortex itself; in the pyramidal tract, especially the internal capsule; in the anterior cells of the cord; in the nerve-fibre; or in the muscle itself. Unfortunately, in the muscles of the eye, we cannot test the electrical reaction, whereas in the arm we can say definitely by the change in the reaction whether the disease is on one side or the other of the motor cells in the cord. In the case that Dr. Prince has spoken of, where there was no disease whatever to be found in the bulb or in the oculo-motor nerves, it is possible, as Oppenheim and Siemerling have suggested in a paper on pseudo-bulbar paralysis,[2] that there is a lesion, not in the capsule, but in the centre for the eye, wherever that may be — possibly in the angular gyrus.

We know, too, that disease in the nuclei will cause this paralysis, and, furthermore, we know that there is in all probability a peripheral disease — we get it in certain isolated muscles in syphilitic disease — where it has absolutely been found that there is a lesion of the nerve after it leaves the motor cell, just as we get a neuritis elsewhere. As far as I know, however, there is not a definite acute inflammatory affection in the bulb, or, at least, in the particular nuclei in the bulb, corresponding precisely to the acute inflammations in the cord. There are, however, a good many affections which may produce this paralysis. In the first place, there are many tumors which may destroy these cells — just as in the cord we may find tumors and other processes which will lead to the same paralyses which, in some cases, resemble progressive muscular atrophy; and so these nuclei in the bulb may be destroyed by tumors or hæmorrhagic encephalitis. Moreover, disease in the floor of the fourth ventricle may destroy them by extension. Nor did I mean to imply that Erb's scheme was to be re-

[2] Berlin Klin. Wochenschr., 15 Nov., 1886.

garded as absolute, that the individual nerves could not be spared in the case of such a lesion. I certainly intended to make the exception that, in post-diphtheritic cases, for instance, where there was in all probability a neuritis, and in many other cases, you could get an involvement of the tissues of the nerves without involving the other structures. As Dr. Putnam has suggested in a recent paper on alcoholic neuritis by Witkowski,[3] it was found that the terminal branches of the nerves were first and most extensively involved. It would be explanatory of some of these cases where there was no affection of the internal muscles of the eye. They may be due, possibly, to the neuritis.

Dr. Wadsworth: May I add only one word? If we have a partial paralysis of some of the muscles supplied by the third pair, while the iris and ciliary muscle are unaffected, of course it is perfectly possible that that should be peripheral. In a considerable proportion of the cases of paralysis of the muscles supplied by the third pair we have such partial cases, and it is generally agreed to consider most of these cases as peripheral; but that is quite different from the case where there is complete paralysis of all the muscles, except the ciliary muscle and iris.

Dr. Prince: I would like, in conclusion, to say one word, especially in regard to paralysis due to peripheral affections. If I understand Dr. Wadsworth, I think experience shows the opposite from what he contends. It is an every-day experience to see paralysis of some of the fibres of nerves without the remaining fibres being affected. We frequently find in peripheral neuritis some of the muscles supplied by the nerve affected, and others not. We find it frequently the case in disease of the facial nerve. It is common experience that, even with intense inflammatory affections, all the muscles are not equally affected.

In one of the cases referred to in my paper, we have a demonstrated case, with autopsy, where there was, on one side, almost complete degeneration of one of the nerves, while the nerve on the other side was only partially so, and yet on both sides nearly the same muscles were affected, and no more in the one side than in the other, and the iris and sphincter were not affected. Also, we have cases following diphtheria, where there were also other symptoms pointing to peripheral disseminated neuritis, there was loss of knee-jerk, etc., ending in recovery. There was another case with no paralysis, but only anæsthesia, followed by recovery. This is experience. I don't mean to argue in favor of the peripheral nature of these affections. It is often difficult to make the diagnosis. In my case I cannot make a diagnosis, but I think that the view must be given up that the disease necessarily means nuclear affection. In regard to the inclusion of the other cases in this category, as Hutchinson did, where there is also paralysis of the ciliary muscle and the iris, of course every one knows that you can have that lesion with paralysis of all the muscles of the third nerve.

There is another case where there was only right-sided ophthalmoplegia externa, and where there was a softened portion extending the whole length of the brain-stem from the thalamus to the pons.

Dr. Wadsworth: It seems to me that we ought to distinguish between the cases of pure ophthalmoplegia externa, which Hutchinson departed from as soon as he had given the name, and cases complicated by other nerve symptoms. In the cases of pure ophthalmoplegia externa, where the iris and ciliary muscle are not affected, and there are affections of the ocular muscles belonging to both eyes and more than one nerve, in such cases it seems to me we have a right to suppose nuclear lesion without going farther. If the iris and ciliary body are affected also, then we have to consider all the circumstances of the case: what muscles are affected, what other symptoms may be present. Of course, there can be no question that we may have multiple paralysis of the ocular muscles from peripheral causes, but that we can have peripheral causes which shall pick out all the fibres in a nerve-trunk which supply certain muscles, quench their function entirely, and leave the fibres in the same trunk supplying other muscles intact, I doubt. The experiments of Heusen and Voelckers on rabbits show, so far as physiological experiments can be relied upon, that, in them, at least, the centres for iris and ciliary muscle are farther forward than the centres of the other muscles supplied by the third pair; and there are pathological and anatomical cases which point in the same direction in man. So it is easy to understand how some nuclei are affected, and not others. I should say that multiple neuritis does not seem to present the pure cases of this disease.

Dr. Putnam: I cannot entirely agree with Dr. Wadsworth. It seems to me that we do find the fibres of a single nerve picked out, as in cases of peripheral neuritis, where the whole system of motor fibres is sometimes degenerated, with entire destruction of the muscles which are attached, and yet the sensory fibres are not involved to any very considerable degree. Furthermore, any one who has examined the nerves of the acute degenerative cases which occasionally occur will have been struck by the fact that side by side with the fibres which are seriously involved are other fibres which are apparently entirely healthy. It is not necessary to suppose that of the fibres lying side by side some only are affected; the disease sometimes begins at the periphery and spreads inward. It is in this way that ataxia is sometimes observed without any corresponding degree of cutaneous anæsthesia, the fibres coming from the muscles being affected out of proportion to the fibres coming from the skin. And where a cranial fossa is the seat of exudation, as I understand Dr. Knapp to assume, I think that there, also, it is admitted that the nerves may be involved in the most singular manner; some of them being entirely unaffected, and others partially affected.

Dr. Knapp: I am afraid that I did not make myself quite as clear as I would like to have done to Dr. Putnam. I meant that, except in the cases of peripheral neuritis, where the nerve-fibres could be affected independently of any surrounding tissue, this statement of Erb might hold true, that the other nerves in the neighborhood might be affected. I do not mean to imply that there may not be cases where the individual nerves are involved; again fasciculated sclerosis or multiple sclerosis may pass up into the nuclei; and, finally, there probably may be, as shown by autopsy in Westphal's case, a degeneration of these special cells precisely similar to the degeneration of the cells in progressive muscular atrophy or in bulbar paralysis. There are probably two classes of these cases of nuclear disease: those where the affection is accompanied with symptoms of tabes, and those where it is an isolated disease, or with other degenerative process

[3] Archiv. f. Psych. u. Nervenkrankheiten, xviii, 809, 1887.

in the motor tract, the true progressive bulbar paralysis, and progressive muscular atrophy.

The acute form of polioencephalitis generally comes on in apoplectiform manner, and is attended with a certain amount of paralysis of the limbs. The differential diagnosis between the cortical and nuclear form and the form from peripheral neuritis is, of course, not easy. Neither is it always easy to differentiate it from some possible lesion higher up, or from pseudo-bulbar paralysis; at the same time, there are certain points which may be considered, which will, at any rate, help in the diagnosis between the peripheral and the nuclear forms.

In the first place, where only a single one of the ocular muscles is paralyzed, it is, I think, rather more likely to be peripheral than to be nuclear. Where a good many muscles are paralyzed, we must bear in mind another point brought forward by Erb: In the first place, to produce complete ophthalmoplegia, there, of course, must be a paralysis of the three nerves, the oculo-motor itself, the trochlear, and the abducens. Now, a peripheral lesion which involves all these three nerves, excepting, possibly, the post-diphtheritic neuritis, which may pick out the nerves themselves, without the surrounding tissue, would also involve the fibres for the internal muscles of the eye in the third nerve; and, if it were in the orbit, we should expect that the upper branch of the fifth nerve, and also the optic nerve, would be involved. We would thus get optic neuritis, neuralgia, and anæsthesia of the upper portion of the fifth, etc.

In the fossa of the skull, however, we have a different state of things. Disease which would be sufficiently extensive to take in the fifth, sixth, and fourth nerves in the middle fossa of the skull, which comes up to the upper portion of the pons, must in all probability take in the whole of the fifth, so that we should find affection of all the branches of the fifth nerve; whereas disease farther back, sufficient to take in the sixth, and also the third and fourth, would probably take in the fifth, and with it the seventh and eighth, so there would be affection of the other motor nerves.

One more point, in regard to the suggestion of syphilis. I would say that the first case that Dr. Prince reported I saw a good many times last winter, when I took the service, and she had been given iodide of potassium then. It was pushed until she took somewhere between two or three drachms three times a day, without any effect, and therefore, it must have been in this nucleus that I speak of, and from a negative point must have considerable bearing.

There is another way in which we may consider that we have a peripheral neuritis in which we may notice ophthalmoplegia externa. The third nerve first divides, sending a branch to the external rectus. This branch then sends a short branch to the ciliary ganglion, and after that goes on and supplies the other muscles of the eye. From the ciliary ganglion run the ciliary fibres to the ciliary muscle. You simply have to suppose, in that case, a neuritis affecting the terminal filaments either before or after the fibres going to the ciliary ganglion, without involving the ciliary muscle. That is a possibility that has been considered in the autopsies. In one case, I believe, it was not found.

The PRESIDENT appointed as a Committee to take into consideration the address from the College of Physicians, Drs. Barnes, Folsom, and Durgin.

THE BOSTON

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THE SCIENTIFIC SPIRIT OF THE AGE.

UNDER this head, Frances Power Cobbe, a strong-minded English lady who has been chiefly noted the past few years for her ravings against vivisection and experiments on animals, which, she thinks, exercise a "demoralizing influence upon any person who may be called upon to make them," writes in the July *Contemporary Review*. She deplores the "materializing tendency of a scientific education," which, among other evils, fosters a "callous and irreverent spirit." "Disease," as estimated from a scientific standpoint, "is the most important of facts and the greatest of evils. Sin, on the other hand, is a thing on which neither microscope nor spectroscope, nor even stethoscope, can afford instruction." The Scientific Spirit (the capitals are hers) is at war with religion, which now "meekly goes to church by a path over which Science has notified: 'On sufferance only!'" We are in danger of losing the pleasures afforded by Art and Nature, Poetry and Music, as fast and as far as we become pervaded by the Scientific Spirit, and the question is pathetically asked: "What shall it profit a man if he find the origin of species, and know exactly how earth-worms and sun-dews comport themselves, if all the while he grow blind to the loveliness of Nature, deaf to music, insensible to poetry, and as unable to lift his soul to the Divine and Eternal as were the primeval apes from whom he has descended."

All this indictment is sufficiently dreadful, if true, although in substantiation of it the writer produces only one witness, the late Mr. Darwin, who, in his recent autobiography, avows that the ever-increasing devotion to the special scientific studies which had absorbed the energies of his life had destroyed his relish for poetry, music, and art. Mr. Darwin was in this respect an exemplification of what every man experiences to a greater or less degree who concentrates his powers on any one study for which he has a special aptitude. It is not necessarily scientific men who, by devotion to their particular calling, becoming in a measure incapable of æsthetic enjoyments, are ex-

amples of what every one knows to be a physiological law, and of which Miss Cobbe might have found another striking instance in Sir Isaac Newton, who was, however, a very religious man; it is just as true that persons with an extraordinary penchant for *music* are often deficient in the scientific spirit, or, to use Miss Cobbe's metaphors, blind to the beauties of science and deaf to the harmonies of nature. The same may be be said of a natural fondness for any of the arts which may produce in the individual a one-sided development. It is, moreover, a fact that, by virtue of the physiological law, true greatness in any specialty becomes possible by the localization and concentration of energy.

That earnest and eminent workers in science may, however, have a cultivated taste for and take a genuine delight in æsthetics, can be affirmed with thousands of examples to support the assertion, and very many of the scientific readers of Miss Cobbe's article will indignantly resent the imputation that scientific habits of thought are in any way inimical to or destructive of the religious sentiment. It might even be contended, to the contrary, that an intelligent appreciation of the order of nature — in the minutest things, as in the greatest — must tend to foster a reverent and devotional spirit, and render a person religious in the true sense of the word.

It cannot be too much insisted on that, whatever apprehensions may be entertained as to the possibilities of harm to cherished beliefs from the prevalence of the scientific method, science is simply *the knowledge and application of facts* (in the moral, as well as in the physical universe), and that any system or belief which can be shown not to be based on facts is pernicious, and ought to be destroyed. Nor can aught but good result from the diffusion of scientific facts and principles, for there can be nothing better or more worthy of pursuit than truth, which is the subject-matter of science.

There is one point in connection with Miss Cobbe's *Contemporary Review* article where there will be more sympathy with the writer among the readers of medical journals; namely, her animadversion of a peculiarly modern custom pertaining to the publication by secular papers of details respecting the sickness and death of certain distinguished patients, though her apparent hatred for doctors leads her to statements that few of our readers will exactly endorse.

"The political press has adopted the practice of reporting the details of illness of every eminent man who falls into the hands of the doctors, and affords these gentlemen an opportunity of advertising themselves as his advisers. The last recollection which the present generation will retain of many an illustrious statesman, poet, or soldier will not be that he died like a hero or saint, bravely and piously, but that he swallowed such and such a medicine, and, perhaps, was sick in his stomach. Death-beds are desecrated that doctors may be puffed and public inquisitiveness assuaged." If doctors do advertise themselves as Miss Cobbe boldly asserts, there is something to be said on the other side. The doctor who dares refuse information about a distinguished patient, has before now been made the subject of criticisms, almost as unpleasant as those of Miss Cobbe herself.

THE BREEDING OF PAUPERS AND CRIMINALS.

At the recent Prison Congress, Mr. C. H. Reeve, of Plymouth, Ind., read a suggestive paper on "Dependent Children," which went deeper than the very obvious question of their support and rearing. In regard to the existing conditions, he said that the origin of a majority of the most undesirable of these children exists in an erroneous and perverted view, by both State and Church, of what constitutes a true marriage, producing a vicious civil and canonical legislation that encourages and sanctions their production, thereby constantly widening the planes of pauperism and crime.

"The mass of dependent children is largely made up of foundlings, illegitimates, children abandoned by worthless parents, orphans of the very poor, with a few better born who become waifs from various causes. In the cases of nearly all of them except the last there is more or less mental deficiency, or deformity in the brain substance, or the conformation or arrangement of brain ganglia.

"Statute law makes marriage a civil contract — a matter of dollars and cents. No matter who comes for a marriage permit — the strong or the weak-minded, the sound and healthy or the deformed and constitutionally diseased, the millionaire or the hereditary pauper, the moral and orderly or the vicious and confirmed criminal, the progenitor of statesmen or of idiots, the sane, or the hereditary insane if favored with a lucid interval, the temperate or the besotted — all are given a permit alike. The revenue is collected, the ceremony authorized, the record made, and this civil contract is fully completed by sanction of law! If a man wants to run a locomotive engine, or practice medicine (elsewhere than in the United States) or plead in the courts, or stand in the sacred desk and talk theology, or teach a school, or run a pilot boat, or even to secure a petty clerkship under Government, he must submit to a rigid examination as to his fitness for the position and its duties, and be able to pass one. But one comes forward to get a permit to enter into a contract that places him under obligations and demands of him duties that are the most important, the most responsible, the most sacred that can be assumed anywhere between the cradle and the grave, that vitally affect the bodies social and politic as well as corporal, now existing and hereafter to exist, directly and indirectly, not a word is said. All are licensed."

Not very long ago the public was admonished by a consul of the United States that a lawful marriage in the United States was not necessarily binding in France as between a Frenchman and an American. It

seemed shocking, but looking at our marriage system as here presented, there is certainly much to be said for the French views of the subject.

Mr. Reeve does not consider the church blameless in the matter. "It regards marriage as a holy, sacramental covenant. By permission of law its ministers ceremonially aid the parties in making this holy covenant, which, at the same time involves the statutory civil contract. It makes little or no inquiry as to the candidates. (One organization may as to belief in a creed). It looks only for a license and the fee in prospect. Even in the shadow of the prison wall and of the gallows its ministers, in sacredotal robes, have united criminals. Thus is it *sanctioned by the church!* What a shocking view is before and around us when we see the public opinion, both legal and social, upholding these conditions! Government maintains a bureau and employs scientific experts, regardless of expense, to hunt out and kill diseased horses and cattle; invades anybody's premises for the purpose, and makes it a crime for the owner to resist. But when a viciously diseased man or woman applies for a legal permission to taint whole generations it asks no questions, extends no protection for individuals or the public, but grants the permit.

"What must follow and does follow this universal misuse and abuse of knowledge and liberty? Plainly, the constant and rapid peopling of the planes of pauperism, idiocy and crime, and the steady widening of those planes; physical and mental disease and deformity; the evolution of new forces that pervert the correct views of a true humanity, and tend to destroy moral perception."

Mr. Reeve made certain suggestions concerning the care of these little unfortunates, and then went on to say that "with the statutes providing for homes and training schools, there should be others looking to the prevention of pauperism and crime by preventing the production of paupers and criminals, and especially their production under the permission and sanction of the State laws and social usages.

"It is a greater evil to bring into life a child on the plane of hereditary pauperism, or in the line of successive criminals, than it would be to adopt the theory of Malthus, confining it to those planes. There is as much wrong in bringing into life a child with insane parentage as there would be in driving a sane child insane by cruel and brutal usage. There is more wrong in bringing into life a child without legitimate parentage than there is in child-stealing for the purpose of professional beggary.

"Let us hope that, slowly, but surely, the knowledge will obtain that marriage is not romance, but the very highest order of business, requiring more deliberation, more care and forethought, and entailing more responsibility than any other act known to humanity. That Government will recognize that it has no greater obligation resting upon it than to see that none have its license to enter into a contract of marriage who are unfit for its relations and duties, as far as human foresight and legal provisions can prevent, and proper inquiry can prevent in most cases, if it be aided by sufficient penalties."

It is a hopeful view of the power of law to suppose it can so regulate the marriage relation as to put an end to the breeding of criminals, paupers, and insane. Careful regulation of marriage has not been so successful in countries where the regulations are most strict as to warrant any very great reliance on it; and surely it would be a curious condition of affairs to forbid the rearing of criminals at home while we import them so freely from the old world, but the condition described in the article we have so freely quoted is one that deserves recognition, and if laws can but imperfectly control the matter, such statements will certainly help to awaken public knowledge upon the subject. Newspaper reports tend to show that Dr. Richardson's chapter on the "Intermarriage of Disease" has brought him a considerable amount of correspondence from those who desire to apply to their own cases what he has to say on the subject.

MEDICAL NOTES.

— A writer in the *Popular Science Monthly*, commenting on the various theories advanced for the prevalence of baldness, says, that while a resident of India he had an opportunity of extended observation of the Parsees, who are compelled by law and usage always to keep the head covered. Through the day they wear a high hat without a brim, which is always made very tight to keep it on, creasing the scalp and he thinks possibly the skull, by its constricted rim; when they remove this, they substitute a skull-cap. But he has never seen a case of baldness in them, nor have they themselves been able to report one to him among their own race. This fact seems to have a rather a damaging effect on the tight-hat-band and constant-hat-wearing theories of baldness.

NEW YORK.

— Among the passengers on board the steamship *Trave*, which arrived from Bremen on the 24th of August, were the eminent German surgeon, Prof. F. E. August von Esmarch and his wife, the Princess Henrietta of Schleswig-Holstein, a cousin of the present Empress of Germany. They were accompanied by their son, Dr. Erwin von Esmarch. The distinguished visitors were met by friends down the bay and escorted to the apartments of Dr. F. Langé, on Lexington Avenue. It is their intention to see as much as possible of America on this, their first visit to the country, and they will devote their time principally to travel and pleasure, though Professor von Esmarch will attend the Medical and Surgical Congress at Washington in September. He is now in his sixty-fifth year, while his wife is fifty-five years old. The Princess is the daughter of Prince Christian, the brother of the German Empress's father, Duke Ernst Gunther.

— Mrs. R. H. Townsend, who, last year, erected at her own expense at Bellevue Hospital a pavilion for operative procedures on female patients, has now given to the Hospital a brick building, two stories in height, for a library and chapel. It is located on First Avenue, immediately in front of the main hospital building, and, when completed, it will conform in general style to the surgical pavilion referred to, which stands on the Hospital grounds at the corner of First Avenue and 26th Street. Heretofore the patients' reading-room has been the office of the Medical Board, and the amphitheatre where the general clinics are held the only place in the institution that could be used as a chapel.

— The Quarantine Commissioners have adopted a resolution in which, in accordance with the power vested in them by an act passed by the last State Legislature, they make Cape Henlopen, instead of Cape Henry, the northern point for quarantine inspection.

Miscellany.

MACTE LISTER TRIUMPHATOR![1]

A Moist-merry, Humid-hilarious Antiseptic Vade-mecum of Internal Surgery, for the Ambitious Modern Physician.

By Dr. Risorius Santorini. Translated by "Famulus."

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(c) *Pulmonary Resection.*

What I have heretofore recorded
Of treatment in conditions morbid
Is prudence, care, conservatism;
Is surgical asceticism,—
Is like amœbic protoplasm
Compared to perfect organism,—
Is modesty, fear, vacillation,
Timidity, procrastination,—
Like infant birth to resurrection,—
Has with true courage no connection,
When we consider lung-resection.

"Experimentally" it 's stated
That normal lungs when amputated,
"Usually" bear this grave proceeding
With little shock and moderate bleeding; —
But even with this full explanation,
I would not risk the operation.

It must be that some detail hitches,
When, of eight strong and healthy bitches
Subjected to this mutilation,
But three survived the operation.

Herr Dr. Schmidt calls this "success:"
I might esteem it something less.

But Dr. Block is my example,
Who after toils and trials ample
With all the various lung-insults,
Reported that he got "results,"
With dogs and oxen, cow and pig,
Hares, rabbits, creatures small and big;
A large and pitiful collection
All sacrificed to lung-resection.

[1] Continued from page 190.

A score recovered — stop! I pray!
I 'll put a question, if I may
[Correct statistics is my pride],
How many of the creatures died?

Ah! would some fairy realistic,
Might sometimes alter facts statistic.

Herr Ruggi, spite of diagnosis,
Resected even tuberculosis.
The patient, through perversity,
Died the same day quite suddenly.

Therefore, observe this one direction
Whene 'er you meditate resection;
Tuberculous lung, where 'er it be,
Is not subject to surgery.

At the same time —Krœnlein has proved it —
(Costal sarcoma — he removed it —)
If to our skilful apprehension
There should be visceral extension;
If the disease should penetrate,
And in the lung proliferate;
If from contact there be a nodule
In peripheric lobe or lobule;
Indulge no further hesitation
Resection is the one salvation.

Therefore, take due care I pray,
Before lung-surgery you essay,
These points you strictly should observe:
Let not your operative "nerve"
Deprive each case of careful study
Before an operation bloody.

Determine, first, if there's adhesion
Between the pleura and the lesion.
For this, an acupressure stylet
(Though doctors often new revile it)
Affords the means of information.
If in the act of respiration
No rhythmic-movement is detected,
A fatal end must be expected.

This is pulmonic surgery.
If you employ it bold and free,
'T will advertise you far and wide;
You'll be extolled on every side.

But I entreat you earnestly
To hold yourself from humbug free;
Which Cayley did not hesitate
With his real worth to associate;
Who maintained in a "genial" thesis
The ground that profuse hæmoptysis
May be relieved, — yes, cured, perhaps
If we the bleeding lung collapse
By operative pneumothorax!!
This might be well in Corvus corax.
This method he, in fact applied;—
The patient very promptly died!

CHAPTER III.

CARDIAC SURGERY.

(a) *Paracentesis Pericardii.*

With weird and superstitious fears
The pericardium appears
For ages to have been neglected
Nor once *in vitam* well inspected.

Few had the courage even to try
Paracentecis pericardii.
Surgery shrank with terror back
When near the pericardial sac.
But nowadays we read and hear
Of various cases every year.
But in *one* man all arts combine,
His name is Dr. Rosenstein.

In the fourth intercostal space
(Exact percussion shows the place),
A finger's breadth from sternal edge,
He punctured, and with "Ego sum"
Pumped from the pericardium,
By means of Potain's instrument,
The sero-purulent content.

But he received no recognition
Till later he made free incision;
An opening wide he then maintained,
And thus the pericardium drained.

Alas! it's easier in our day,
This to describe than to essay!
Who therefore would upbraid a fellow,
Or fancy that his skull were callow,
If rarely he should find occasion
For such a doubtful operation?
Ah! could we gather information
In each case of the exudation,
We should feel much more certainty
In pericardial surgery.

But as the symptoms may agree
With those of heart-hypertrophy;
As well as cardiac dilatation
Due to defective compensation —
Not to allude to aneurism —
Alas! This is no solecism.
If any case in judgment tax him,
The doctor should apply this maxim;
To advocate no operation
Before sub-dermic exploration.

Given, that to a great degree
And permanently there's dyspnoie,
The law is: Promptly operate.
The heart else may degenerate;
And bacillary immigration
Occur within the exudation.

(b) *Cardicentesis.*

Behold to what sublime degree
Now towers internal surgery!
And possibly your lips proclaim
Of German intellect the fame.
But in America you'll find
We leave the Germans far behind.
Have you not heard of Westbrook's name?
Do you not know of Westbrook's fame?
Who, when heart-failure with aphonia
Appeared in course of a pneumonia,
The right auricle aspirated,
And ninety grammes of blood vacated.
The next day, punctually at three,
Was held the patient's autopsy.
The cavum pericardii
Was filled with blood and flocculi;

But Roberts hopes "with certainty"
That in a few years we shall see
Good doctors all with acclimation
Adopting Westbrook's operation.

My friend, you should not feel surprise
At anything a Yankee tries.
From him we soon expect direction
Not only for cardiac resection,
But for aortic ligature.

(To be continued.)

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

WASHINGTON, D. C., August 27th, 1888.

In view of the fact that frequent inquiries are made of the Committee of Arrangements by medical men and others in regard to the character of the organization now known as The Congress of American Physicians and Surgeons, which will hold its first triennial session in Washington, September 18, 19 and 20, it may be proper to state that several years ago the American Surgical Association, passed a series of resolutions declaring it expedient that the special medical societies in this country should adopt some plan of organization by which they should be brought together at certain stated periods, and invited the other societies, to co-operate with it in perfecting such a scheme. This invitation was accepted by the several societies, and in October, 1887, a committee of conference, composed of delegates from each of the societies, assembled in this city and agreed upon a plan of association, which was subsequently considered and accepted by the societies constituting the Congress as now organized. This plan consists simply of the agreement that the medical societies named shall hold their usual annual meetings at the same time in this city every third year, and that an executive committee, composed of one member of each society accepting the agreement, shall arrange for one or more general meetings for the consideration of such medical subjects, by such physicians and surgeons as it may select, to be followed by such general discussion as time may permit. The present Executive Committee is also charged with the duty of devising and submitting a plan of permanent organization, which will be considered at a preliminary meeting on Tuesday morning, September 18. There is no membership in the Congress proper. Membership belongs exclusively to the several societies constituting the Congress. Each society prescribes it rules for admission of candidates, and transacts its business according to its own method. The Congress, as such, does not in any manner interfere with the autonomy of the several constituent societies.

The guests are men of distinction in some special department of Medical Science, who have been invited by some one of the constituent societies to attend its meetings, and perhaps to present a paper on some chosen subject. They are guests of a society, not of individual members. The Committee of Arrangements has not claimed or exercised the privilege of naming guests, nor has it conceded the privilege to individual members. At its suggestion the Executive Committee has invited the heads of the government bureaux of medicine, the president of the last International Congress, and several citizens to whom it was indebted for courtesies. In the event there should be present from abroad any medical man, who may not have been specially invited, the Committee will hold itself bound by ordinary courtesy to include him in the list of guests.

The meetings of the Congress and of the Societies will be open to the profession. Any medical man who may choose to attend has the privilege of doing so; but the privilege of taking part in the discussions will be limited to the members, guests, and those who may be invited to do so by the societies respectively. The invitation to attend the meetings and engage in discussion will not, however, entitle one to the privileges of a guest.

Members and visitors must avail themselves of the ordinary excursion rates of railroad fare.

The Postmaster of this city has arranged facilities for the distribution of the mail at the office of registration, in Willard's Hotel. Letters must be addressed to "The Congress of American Physicians and Surgeons."

It may be added that the Committee of Arrangements declines to make any provision for, or to have anything to do with, any exhibit of pharmaceutical preparations and medical and surgical appliances.

I assume the responsibility of making the foregoing statement for the information of those concerned, and to avoid confusion and misunderstanding. And it gives me great pleasure to announce that the meeting in every aspect promises to be a conspicuous success. Yours truly,

SAMUEL C. BUSEY, M.D.,
Chairman Committee of Arrangements.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 18, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	802	430	34.80	10.80	22.92	.96	5.76
Philadelphia	1,016,758	—	—	—	—	—	—	—
Brooklyn	751,432	445	247	44.54	9.90	25.30	1.54	2.64
Chicago	760,000	339	189	35.56	7.25	25.81	2.61	2.90
St. Louis	449,160	165	80	27.27	4.24	10.20	4.24	5.45
Baltimore	437,155	224	134	39.60	10.35	33.75	.45	.80
Boston	407,024	228	110	40.04	12.32	27.28	.88	1.76
Cincinnati	325,000	152	—	16.50	9.24	13.80	1.32	.66
New Orleans	248,000	109	38	28.96	17.12	9.17	—	12.88
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	110	60	38.18	6.36	25.45	3.63	—
Pittsburgh	210,000	96	54	40.56	8.32	24.96	6.24	4.14
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	38	14	44.72	15.78	34.19	5.26	—
Nashville	65,153	24	8	37.44	12.38	20.80	8.32	—
Charleston	60,145	50	24	18.00	8.00	10.00	2.00	—
Portland	40,000	12	3	—	16.66	—	—	—
Worcester	76,328	37	26	45.90	5.40	35.10	5.40	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	26	17	53.90	7.70	34.65	3.85	7.70
Fall River	61,203	35	27	90.52	5.72	90.52	—	—
Lynn	51,467	23	—	8.70	8.70	—	4.35	—
Lawrence	40,175	—	—	—	—	—	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	25	15	48.00	—	48.00	—	—
Somerville	33,307	13	7	61.52	15.38	53.83	—	7.69
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	—	—	—	—	—	—	—
Chelsea	27,552	12	7	16.66	16 66	16.66	—	—
Haverhill	24,979	11	5	18.18	9.09	18.18	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	—	—	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	10	7	40.00	20.00	40.00	—	—
Malden	18,932	12	10	—	—	—	—	—
Fitchburg	17,534	14	10	35.70	7.14	35.70	—	—
Waltham	16,651	6	4	33.33	16.66	33.33	—	—
Newburyport	13,839	8	—	37.50	—	37.50	—	—
Northampton	13,419	3	1	33.33	—	33.33	—	—

Deaths reported 3,079: under five years of age 1,527; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,067, consumption 295, acute lung diseases 130, diarrhœal diseases 751, diphtheria and croup 112, whooping-cough 61, typhoid fever 55, malarial fever 32, measles 25, scarlet fever 16, erysipelas eight, cerebro-spinal meningitis seven. From whooping-cough, New York 24, Baltimore and Washington five each, Brooklyn eight, Chicago and St. Louis four each, Boston and Pittsburgh three each, New Orleans and Cambridge two each, Charleston one. From malarial fevers Brooklyn eight, St. Louis six, Baltimore five, New York and Washington four each, Charleston two, New Orleans, New Haven and Nashville one each. From measles New York 13, Chicago eight, Brooklyn two, Pittsburgh and New Haven one each. From scarlet fever New York eight, Brooklyn five, Boston, New Orleans and Pittsburgh one each. From erysipelas, Boston four, New York, Chicago, St. Louis and Worcester one each. From cerebro-spinal meningitis, New York three, Boston, Nashville, Worcester and Lynn one each.

In the 28 greater towns of England and Wales with an estimated population of 9,398, 273 for the week ending July 28th the death-rate was 15.8. Deaths reported —: Infants under one year —: acute diseases of the respiratory organs (London) 160, diarrhœa 156, whooping-cough 65, measles 62, scarlet fever 40, diphtheria 35, small-pox (Preston) 3.

The death-rates ranged from 8.1 in Derby to 25.4 in Halifax: Birmingham 13.2; Bradford 12.7; Hull 14.4; Leeds 16.6; Leicester 12.4; Liverpool 17.1; London 15.9; Manchester 20.3; Nottingham 12.0; Sheffield 15.9; Sunderland 15.8; Wolverhampton 16.0.

In Edinburgh 13.7; Glasgow 17.0; Dublin 18.0.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending August 4th the death-rate was 16.0. Deaths reported 2,881: Infants under one year 898; acute diseases of the respiratory organs (London) 167, diarrhœa 215, measles 64, whooping-cough 61, scarlet fever 39, diphtheria 27, fever 21, small-pox (Preston two, Sheffield, Hull and Oldham one each,) 5.

The death-rates ranged from 21.9 in Manchester to 9.0 in Bristol: Birmingham 15.8; Bradford 13.6; Leeds 16.5; Leicester 18.1; Liverpool 18.6; London 15.9; Nottingham 12.7; Portsmouth 14.6; Sheffield 18.8; Sunderland 13.4.

In Edinburgh 15.7; Glasgow 18.2; Dublin 21.1.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING AUGUST 25, 1888.

Simons, Manly H., surgeon. Detached from "Constellation" and to the Naval Academy.

Russell, A. C. H., passed assistant surgeon. Detached from "Constellation" and to the Naval Academy.

Dickson, S. H., passed assistant surgeon. Detached from Marine Barracks, Washington, D. C., and to the United States Steamship "Richmond."

Cordeiro, F. J. B., passed assistant surgeon. Ordered to the United States Steamship "Mohican."

Farwell, W. G., surgeon. Detached from the United States Steamship "Saratoga" and ordered home to wait orders.

Dickinson, Dwight, surgeon. Detached from the United States Steamship "Portsmouth" ordered home to wait orders.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FOR THE WEEK ENDING AUGUST 24, 1888.

Mason, Charles F., assistant surgeon U. S. A. Ordered to Fort Washakie, Wyo. Ty., for duty. Paragraph 5, S. O. 190, A. G. O., August 17, 1888.

Vollum, Edward P., lieutenant colonel and surgeon U. S. A. Leave of absence extended two months. Paragraph 17, S. O. 192, A. G. O., August 20, 1888.

Appel, Daniel M., captain and assistant surgeon. Ordered to Fort Bliss, for temporary duty. S. O. 77, Department of Texas, July 25, 1888.

Cowdrey, Stevens G., captain and assistant surgeon. Granted leave of absence for one month. S. O. 77, Department of Texas, July 25, 1888.

Woodhull, A. A., major and surgeon U. S. A. Relieved from duty with Army Retiring Board, Fort Leavenworth, Kan. Paragraph 10, S. O. 190, A. G. O., August 17, 1888.

Ainsworth, Fred C., captain and assistant surgeon U. S. A. To proceed to Atlanta, Ga., and inspect the new Army Hospital at that place. Paragraph 18, S. O. 192, A. G. O., August 20, 1888.

The meteorological record for the week ending August 18, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Aug. 18, 1888.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum	7.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, . . 12	30.20	64.0	70.0	60.0	75.0	84.0	78.0	S.	E.	3	12	O.	O.	2.00	.04
Monday, . . 13	29.88	62.0	73.0	58.0	100.0	92.0	96.0	E.	N.	24	6	R.	O.	7.00	1.44
Tuesday, . . 14	30.01	66.0	76.0	56.0	64.0	60.0	62.0	W.	W.	24	8	F.	C.		
Wednes, . . 15	30.05	72.0	82.0	29.0	60.0	82.0	71.0	W.	S.	9	14	O.	C.		
Thursday, 16	29.97	78.0	87.0	68.0	78.0	72.0	75.0	S.W.	S.W.	9	10	F.	C.	2.00	.03
Friday, . . . 17	29.89	78.0	86.0	72.0	69.0	91.0	80 9	W.	S.W.	12	17	F.	F.	8.40	.23
Saturday, . 18	29 96	74.0	84.0	68.0	70.0	64.0	67.0	W.	W.	12	3	F.	O.	3.00	.07
Mean, the Week.															

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OWEN, W. O., JR., captain and assistant surgeon U. S. A., Fort Leavenworth, to report for temporary duty to the commanding officer, Fort Gibson, I. T. Paragraph 1, S. O. 104, Department of the Missouri, August 20, 1888.

HEGER, ANTHONY, surgeon U. S. A. In addition to his other duties to attend to the duties of the medical director, Division of the Atlantic during absence of Col. Charles Sutherland. Paragraph 4, S. O. 170, Division of the Atlantic, August 18, 1888.

WOOD, LEONARD, assistant surgeon U. S. A. To proceed from Fort McDowell to San Carlos, A. T., and carry out the instructions of the Department Commander. Upon completion of that duty to return to proper station. S. O. 89, Department of Arizona, August 1, 1888.

JANEWAY, JNO. H., major and surgeon U. S. A. Granted leave of absence for one month on surgeon's certificate of disability. Paragraph 2, S. O. 41, Division of the Pacific, August 8, 1888.

MANS, LOUIS M., captain and assistant surgeon U. S. A. Having completed rifle practice at Camp S B. Luce, Fisher's Island, N. Y., to return to his proper station (Fort Schuyler, N. Y. H.) Paragraph 1, S. O. 171, Division of the Atlantic, August 20, 1888.

WRIGHT, JOSEPH P., major and surgeon U. S. A. Detailed as member of Army Retiring Board, Fort Leavenworth, Kan., vice A. A. Woodhull, major and surgeon U. S. A., relieved. Paragraph 10, S. O. 190, A. G. O., August 17, 1888.

SUTHERLAND, CHARLES, colonel and medical director. Directed to inspect the Medical Department at Forts Brady, Mackinac and Wayne, Mich., Forts Porter, Niagara, and Ontario, New York, Madison Barracks and Plattsburg Barracks, New York, Fort Preble, Me., Fort Warren, Mass., Fort Adams, R. I., Fort Trumbull, Conn. Paragraph 7, S. O. 168, Division of the Atlantic, August 16, 1888.

GORGAS, WM. C., captain and assistant surgeon U. S. A. Leave of absence granted in S. O. 177, A. G. O., August 1, 1888, revoked and ordered to proceed to Camp Monte Sano, Huntsville, Ala., and report in person to the commanding officer thereof for duty, relieving Major Harvey E. Brown, surgeon. Paragraph 8, S. O. 187, A. G. O., August 14, 1888.

TORNEY, GEORGE H., captain and assistant surgeon U. S. A. To proceed to St. Augustine, Fla., *via* Palatka, accompanying the U. S. Troops thereat to Huntsville, Ala., as medical officer, and thereafter to return to his proper station (Fort Monroe, Va.) Paragraph 4, S. O. 165, Division of the Atlantic, August 13, 1888.

SMITH, JOS. R., surgeon and medical director, Department of Dakota. To inspect Forts Pembina, Totton, Buford, Abraham Lincoln and Yates, D. T. Paragraph 4, S. O. 77, Department of Dakota, August 13, 1888.

OBITUARY. HENRY F. QUACKENBOS, M.D.

Dr. Henry F. Quackenbos, a well-known New York practitioner, died at his residence August 21st, after a lingering illness. He had for a considerable time been suffering from chronic Bright's disease, but the immediate cause of death was pneumonia. He was born September 20, 1819, in New York, of which city his father, Dr. Nicholas I. Quackenbos, was also a native. Both father and son were graduates of Columbia College. In 1840 Dr. H. F Quackenbos was graduated from the College of Physicians and Surgeons, New York, and he afterwards went abroad and pursued his medical studies in London Edinburgh and Paris. While residing at the latter capital he was appointed surgeon of a brigade commanded by General Pellisser, afterward Duke of Malakof, and with it he served in the French Campaign in Northern Africa against the Algerians. He then returned to New York, and during the cholera epidemic in 1849, he was in charge of Bellevue Hospital, where his devoted and energetic services won him marked distinction. Dr. Quackenbos had a very extensive private practice, particularly among members of the theatrical profession, and from the date of its organization he was honorary physician of the New York Dramatic Fund Association. The last prescription he ever wrote was for Mr. Davidge, the genial comedian who recently died while on his way across the continent to California. For many years he attended the late Edwin Forrest, who, it is said, if taken ill while travelling, would always send for him, however distant from New York he might be. Dr. Quackenbos leaves a widow and one son.

HENRY O. STONE, M.D.

Dr. Henry Osgood Stone, who died August 23d, at the age of sixty-seven, at Salem, in the very house where he was born, was one of a large family of brothers, two of whom, the lamented Dr. John O. Stone, of New York, and the subject of this notice, became distinguished in the medical profession. Dr. Stone graduated at Harvard in 1841, and as M.D., at the University of Pennsylvania in 1844. After two years spent in Europe, he established himself in Boston, where his accurate knowledge, excellent judgment and self-sacrificing devotion soon made him conspicuous; although these qualities were united with a modesty which shrank from praise. Amply qualified in all departments of the profession, he had a special aptitude for surgery. But his health was never robust; and, after the death of his father, at the desire of his family, he returned to his native city, and became a welcome addition to the list of Essex County practitioners. Frequent intense attacks of migraine, to which he was subject, and which were especially induced by railway travel, compelled him to decline consultations out-of-town, and finally led him to withdraw from active practice; though he always retained a keen interest in whatever pertained to his profession; and he found congenial resources in books and in the exercise of a large benevolence. Highly cultured, refined in word and deed, cheerful, dignified and independent, but of great sprightfulness and wit in conversation, he filled a place not to be supplied in his family, in the large circle of his friends, and in the community in which he lived. Many of us can say, "I would that Heaven had made me such a man."

Dr. Stone's decease was sudden: A strange sensation in the head on Wednesday was followed by a partial paralysis on Thursday; but he continued conscious, able to talk, and fully aware of his condition; and at three in the afternoon of that day he quietly passed away.

THOMAS T. SABINE, M.D.

Dr. Thomas T. Sabine, the distinguished surgeon, son of Dr. Gustavus A. Sabine, who survives him, died August 23d, having been ill for some time with a complication of diseases. He was graduated from the College of Physicians and Surgeons, New York, in 1864, and in 1879 was appointed Professor of Anatomy in the College. For a number of years he was attending surgeon to Bellevue Hospital, St. Luke's Hospital, the New York Orthopædic Dispensary and Hospital, and other institutions, and he was highly esteemed for his many genial qualities no less than for his marked professional ability and rare skill as an operator.

Original Articles.

THE BACTERIA OF THE ALIMENTARY CANAL ESPECIALLY IN THE DIARRHŒAS OF INFANCY.

BY JOHN A. JEFFRIES, M.D.

THAT the interest lately developed in the study of the relation of bacteria to the diarrhœal diseases of infancy is justified will probably be acknowledged by all. On the other hand, owing to the recent development of bacteriology and the obscure way in which some of the most important articles have been published, those not actively studying the subject have but slight ideas of the advance made, advance already giving results in practice.

Both treatment and prophylaxis have improved. An infant can now cross the ocean provided with a supply of milk, cream mixture, or the like, sure to keep fresh, and identical with the food of the nursery. We are now justified in looking forward to another stride in the difficult subjects of artificial feeding of infants and the intestinal troubles of the same. The last great step was made by the chemical study of foods and the general realization of the fact that cows' milk is not mothers' milk, and a growing belief that were young animals fitted to feed on vegetable food nature would not have taxed the parents so heavily to provide an animal food. All the higher forms of life conform to this law, the helpless young are fed on animal food. We see this not only in the milk of mammals, but in the insect food of the helpless young of birds.

Bacteriology has now shown that, provided we start with a food chemically right, care must be taken or our worst foes, bacteria, will quickly invade the field, and, as if by the wave of a wicked fairy's wand, change the whole into poisons. Not only do bacteria work harm from without and within the body, but certain forms appear positively beneficial, inasmuch as by preemption of the alimentary canal they exclude more noxious forms.

The cavity of the mouth and throat offer little of importance to the subject. Many forms of bacteria are known to occur and to play a causative part in certain local diseases, as decaying teeth, thrush, and the like. Again, forms pathogenic to animals commonly occur, and forms known to be so to man are by no means rare. Yet on the whole the flora of the mouth is fairly constant, as shown by Vignal,[1] and Miller,[2] and chiefly of interest not for the harm it does, but for the converse. How is it that so many noxious forms existing in the mouth and being swallowed with the food and saliva disease is not vastly more rife? This is an interesting question. Unfortunately, as yet replies can only be made in general terms, that the epithelium of the mouth, true skin, is thick and the parts beneath very vascular, thus offering decided mechanical difficulties to the entrance of bacteria, and a prompt, powerful response from the system to any threatened invasion.

Once arrived in the stomach it has, until recently, been generally held that the bacteria would be killed by the hydrochloric acid, perhaps digested by the pepsin. Like other mistaken beliefs it is difficult to trace this to its source, or to collect and arrange the arguments in its favor.

Bienstock [3] seems to have been the first to put this idea forward, supported by experiments. This author held that only four or five kinds of bacteria occurred in the intestines, and on experimenting with those in a spore-free condition found them to be killed by a 2 % hydrochloric acid solution.

Koch first showed that the vegetative form of the anthrax bacillus was unable to resist the action of the hydrochloric acid during the normal course of digestion of vegetable eaters, but that the spores could pass through.

Koch, however, also pointed out in relation to the cholera bacillus that the empty stomach is not acid, that all the food does not stay there for hours, and that time is required to bring the hydrochloric acid up to the normal, 2 %.

We now know, thanks to the studies of Miller, De Barry and Escherich, that living bacteria are to be found in the stomachs of man and the animals, while the literature on sarcina ventriculi, a special form, beginning with the note by Goodsir [4] in 1842, has grown to large proportions in the work of Falkenheim [5] and others.

Miller [2] has isolated several forms from the digestive tract, and studied the effect of artificial digestion on pure cultures, but disregarded the question of spores. This was unfortunate, as it has always been granted that spores could pass through the stomach, yet it is improbable that spores existed in all his cultures, such not usually being formed under the conditions with which they were grown. He showed that the full period of digestion with a .16% hydrochloric acid solution was required to affect the forms studied. Also, Miller found that, contrary to the statements of Bienstock, eight forms found in the mouth occur in the stomach, and twelve in the stools. His final conclusions are that all the forms studied could pass through the stomach during the first part of digestion. Here it is of importance to remember that the food begins to pass through the pylorus in from fifteen to twenty minutes after eating.

In a later article Miller returned to the subject and showed that four kinds of gas-producing forms isolated by himself from the stomach of a man, were able to pass through the stomach of a dog. Miller mixed pure cultures with the food and fed four dogs, later killing them two and a-half, six, eight and nine hours after feeding. In the first two the stomach and intestines were found acid, in the third the lower part was alkaline, and in the fourth the entire digestive tract. All four kinds were again isolated from the stomachs, small intestines and rectums of the first three dogs. No living bacteria were found in the stomach of the fourth dog. The dogs suffered from diarrhœa. Lastly Miller took a milk culture of his first species and suffered sufficiently to forego all further experiments on himself.

This last set of experiments shows clearly that bacteria can pass through the stomach into the intestines and live for a considerable time, but is open to the same objection as his first set, the failure to exclude spores.

[1] Vignal. Archiv. de Physiologie, 1886, p. 325.
[2] Miller. Deutsch. Med. Wochenschr., 1884, p. 781, 1885, p. 843; 1886, p. 117.
[3] Bienstock. Fortschr. d. Medecin, 1883, p. 609; Zeitschr. f. Klin. Med., 1884, p. 1.
[4] Goodsir. Edinborough Medical and Surgical Journal, 1842.
[5] Falkenheim. Archiv. f. Experim. Pathol. u. Pharmakol., 1885, Vol. XIX, p. 339.

De Barry[6] studied the vomitus ejected by a man, and found seven species besides the mycelium of a mould. His work, however, was not done in strict accord with modern methods.

The most recent and conclusive work has been done by Macfadyen,[7] to whose very able article all students of the subject are much indebted. He experimented with pure cultures of harmless and pathogenic forms exposed to the action of pepsin, hydrochloric acid, and the two together in various strengths. As results he found that pepsin had no effect, while it required the action of a .05% to a .3% solution of hydrochloric acid for four hours at 37° centigrade to kill the various species used. The comma, Finkler-Prior and bacillus prodigiosus were killed by the .05% solution, while .3%, fifty per cent. more than the normal human standard, was required to kill the ordinary micrococcus of pus or the bacillus of typhoid fever. The absence of spores was insured in every case.

Next Macfadyen followed up his test experiments with some on the dog. Dogs fasting for twenty-four hours were fed with foods containing pure cultures of the pus micrococcus, and killed after five hours. All showed large numbers of the aureus throughout the digestive tract, and especially numerous in the lower parts. Dogs not fasting gave the same results.

Lastly, Macfadyen tried to pass the more perishable forms through the stomach, and found that by giving a thirsty dog water, containing the culture, to drink, any form could be introduced into the intestines, even the cholera bacillus. Under such conditions, common ones among men during hot weather, and notoriously unhealthy, the water scarcely stops in the stomach, but passes through the pylorus almost as soon as swallowed.

It is thus clear that the stomach offers but an insecure protection, many forms outlasting the test of full digestion in the dog, and any form being able, under natural conditions, to pass the stomach. The dog's stomach is a fair test, since the acid is the active principle, and more abundant than in man.

That the bacillus of tuberculosis can pass the stomach, as shown by feeding experiments, is well known to all.

Of the morphology and biology of the forms found in the stomach little is known. The field is a new one, and the species have not been sufficiently described to enable others to recognize them with certainty. Miller has found five kinds which give off carbonic dioxide and hydrogen gas, lactic, acetic and butyric acids being formed. In some cases an inflammable gas is known to have been formed in the stomach, probably marsh gas.

Of the flora of the intestines much more is known than of that of the stomach, thanks to the work of Bienstock, Miller, Brieger, Vignal and Escherich, not to mention the facts brought out in the study of typhoid fever and cholera.

Bienstock[8] was the first to attack the subject by means of cultures. Unfortunately his methods were inexact, and he shut his eyes to facts long revealed by the microscope. This led him to claim the existence of only four or five kinds of bacilli in the fæces, hence in the intestines, and to deny the existence of micrococci. To one of the forms he attached special fermentative and digestive powers, which he held were of decided assistance to the process of digestion; thus from experimental grounds advancing Pasteur's idea that, were it not for the action of the bacteria in the intestines our digestion would fail, and human life become impossible, — a very pretty theory which has by its sensational nature recommended itself to many, but has failed to find support in facts, as yet discovered. In his last article Bienstock entirely dropped this subject, and it is only mentioned here as it has found its way into not a few books.

The last form described by Bienstock is his drumstick, a very powerful decomposer of albumens, and not to be found in the fæces of sucklings. In regard to this form Bienstock again seems to be in error. No one else has found it, but it has been shown to be a very dangerous source of contamination of the various nutritive media employed, being very hard to kill. Escherich at one time described the form as occurring, but later found it to be a contamination.

The researches of Brieger,[9] Vignal,[10] Stahl[11] and Escherich,[12] have now proven that a large number of species may occur in the fæces. Brieger isolated two new kinds, one a micrococcus, which turns grape or cane sugar into ethylalcohol, with a trace of acetic acid; the other, the well known Brieger's bacillus. This species occurs in vast numbers in the fæces, ferments sugars and decomposes albumens.

Vignal isolated ten species from the fæces, six of these being also found in the mouth. Of these some produced acid fermentations and gas. Unfortunately they were not studied sufficiently to show their effects on digestion.

Miller has already been referred to in treating of the stomach; the inaugural dissertation of Kuisl,[13] has not been seen.

This brings us to the work done by Escherich, and the conclusions to be drawn from the same. This author studied the fæces of infants, the intestinal contents at autopsies, and found a large number of kinds. Among them, a small bacillus capable of converting milk sugar into lactic acid, carbonic dioxide and hydrogen gas being evolved, either in the presence or absence of air — in scientific parlance, a falcultative anaërobic species, his bacillus lactis aërogenes. Escherich also studied and described at length the action of Brieger's bacillus under the name of bacillus coli commune.

Both of these forms are fatal to guinea-pigs and rabbits when introduced into the venous system. Post-mortem examination, showing the spleen and kidneys normal, marked injection of the upper part of the intestine, mucous membrane swollen, chyme thin, alkaline, mixed with much mucus, Peyer's patches appearing as swollen, resistant, bluish-red spots through the serous coat; in places, superficial epithelial loss. With Brieger's bacillus, diarrhœa also occurred at times.

[6] De Barry. Archiv. f. Experimen. Pathol. u. Pharmachol., 1886, Vol. XX, pp. 24 and 270.
[7] Macfadyen. Journal of Anat. and Physiol., 1887, Vol. XXI, pp. 227 and 413.
[8] Bienstock. Fortschr. d. Medicin, 1883, p. 609; Zeitschr. f. Klin. Med., 1884, p. 1.
[9] Brieger. Zeitschrf. f. Physiol. Chem., 1884, p. 306.
[10] Vigal. Archiv. de Physiologie, 1884, p. 492.
[11] Stahl. Verhandl. des III Congress f. innere Medecin, 1884.
[12] Escherich. Die Darmbacterien des Säugline und ihre beziehunger zur Physiologie der Verdanuung, 1886. Also for shorter notes see Deutsch. Med. Wochenschrift, June 14, 1886, Therap. Monatshefte, Vol. I, 1887, p. 389; Centralbl. f. Bacteriologie, Vol. II, 1888, p. 644; Fortschrit. d. Median, 1886, pp. 515 and 547.
[13] Kuisl. Darmbacterien. Inaug. Dissert. München, 1885.

In addition to the two pathogenic forms just mentioned, Escherich found proteus vulgaris in meconium streptococcus coli gracilis, bacillus subtilis, and several other forms of less interest.

The great point is that by the examination of a large series of cases Escherich has been able to establish the fact that the kinds occurring in the fæces vary with the food; that is, the intestinal contents.

Starting at birth with the sterile meconium, consisting of mucous, epithelium and the like, infection by the mouth and rectum quickly occurs, and in a short time most any form may be found, but chiefly putrefying forms, as proteus vulgaris. With the suckling of the child and the substitution of the refuse of the milk and secretion of the digestive tract for the meconium, a sharp transition occurs. Instead of the generally distributed forms causing decomposition, only two kinds are regularly found: B. lactis aërogenes and Brieger's bacillus; the first chiefly in the upper parts of the intestine, the second in the lower parts. Passing on to the period of mixed diet, quite a number of forms appear, among them the streptococcus coli gracilis, the putrefying green fluorescing, a tetrad coccus, and several kinds of yeasts. This brings us to the pith of the subject: why are the flora so limited in the milk-eating infants and so diverse in others? What drives the forms found in the meconium out? That they can live there is clear, as shown by their presence the day before. Again, what prevents forms so common with meat diet from gaining a footing? It is not the milk alone, for milk is an almost universal food for bacteria, and all the kinds found in the intestines thrive in it.

Escherich answers as follows: the bacillus lactis aërogenes and the milk diet keep out the other forms.

Formerly, even before the nature of ferments and putrefactive processes were clearly understood, the significance of this question was seen. The chyme is a mass admirably adapted for putrefaction or fermentation, yet, ordinarily, but little of either occurs. It is an alkaline, or, as in the milk-fed, acid mixture rich in albumens, fats, and the starch group, amply provided with water and warmth. Such a mixture outside the body at an equal temperature would quickly decompose. It was generally held that some preservative action was exerted by the digestive juices; Bidder's and Schmidt's dogs with biliary fistulæ were held to explain the whole. These dogs, deprived of their bile, became emaciated, and suffered from diarrhœa and decomposition of the intestinal contents. Thus it seemed clear that in the absence of the bile decomposition occurred; that is, that the bile was a powerful germicide or germ-inhibitor. During the last few years, however, different results have been obtained in cases of biliary fistula. Röhmann's[14] dogs did not suffer from diarrhœa or putrefaction in the intestines; hence it is clear that the bile is not the cause of prevention. The diarrhœa, if present, is due to the large amount of fat passed on to the lower intestines.

Maly[15] and Emich[16] ascribed value to the bile acids, especially the taurocholic, basing their results on crude methods; and Lindenberger,[17] really leaving the subject, attributed the action to the organic acids in combination with the bile.

[14] Röhmann. Beobachtungen an Hunden mit Gallenfistel. Breslau, 1882.
[15] Maly. Hermann's Physiologie, v, p. 184.
[16] Emich Sitzberich. d. Akad. d. Wissenshft. Wein., 1882.
[17] Lindenberger. Upsula Forhandlingar, 1884.

All this argument and belief in the decided germicidal action of the bile occurred in the face of the well-known fact that bile itself will decompose.

From a bacteriological standpoint, Miller has shown that a ten per cent. solution of bile, if anything, favors growth. Macfadyen has studied bile, bile salts, and bile acids in varying strengths. The only positive results were got with the acids, these arresting development of bacteria if sufficiently strong, especially taurocholic acid. Neither acid had much effect, and least of all on the forms causing putrefaction. Proteus vulgaris was only arrested by a strength of from one to two per cent. The pathogenic forms were arrested by a much smaller quantity, from one to one-half per mille.

It is thus clear that other causes must be sought for. One of these is to be found in the lack of oxygen in the intestines, as pointed out by Escherich and strangely forgotten by others. There is certainly very little free oxygen in the chyme, if any; not only is it scarce in the food at the start, but is taken up by the chemical changes during digestion, and also by the intestines. This clearly must be a potent factor, for the majority of bacteria require a fair supply. Accordingly, many bacteria are found in the fæces which will not grow in the air, as shortly stated by Macfadyen, and the mass of those isolated in the air are able to grow without it.

This apparent contradiction, the absence of oxygen in the intestines, and the presence of both aërobic and anaërobic bacteria is probably explained by the ability of the aërobic kinds to drawn oxygen from oxyhæmaglobin. They thus breathe through the intestines, as it were, when in close contact with the walls, while the anaërobic kinds live in the mass of the chyme, and do not, so far as we know, reduce oxyhæmaglobin.

Escherich, though he points out the absence of oxygen, does not seem to give it full value, or rather forgets the subject in treating of the action of his lactic acid bacillus. As before stated, this form is regularly found in great numbers in the upper part of the intestines of milk-fed children. Here it converts a considerable part of the milk-sugar into lactic acid (Baginsky[18] says acetic acid, but has given no proof), and thus prevents the other forms from growing, most forms being very susceptible to an acid reaction, and especially to the organic acids. The action of salicylic acid is known to all, and recent experiments, of which Macfadyen's (the last are the best) show acetic, butyric, and lactic acid to be efficient germ-inhibitors in strengths of from one to one-half per mille, according to the species.

In milk-fed infants another point is the comparative inability of bacteria to attack casein, so that the bacteria are literally starved.

To sum up, we may conclude that the bile acids, lack of oxygen, lack of suitable albumens, and the presence of organic acids are the causes of immunity from the putrefying and fermenting kinds of bacteria to which we are exposed. Certain forms are probably limited by the lack of water, that is, fluid state, doing poorly if unable to swim freely about. It must not, however, be supposed that bacteria are scarce in the intestines, on the contrary they form a large part of the dry substance of the fæces.

Brieger's bacillus has been passed by us as of no im-

[18] Baginsky. Deutsch. Med. Wochenschr., 1888, Nos. 20 and 21.

portance in reference to the above. It thrives in the lower part of the intestine, feeding on the refuse passed on from above, and secretions and excretions of the tract. The species has a fermentative action, producing alcohol and a trace of acetic acid (Brieger), a powerful action on proteids and breaks up fats (Escherich).

Passing from the normal condition of the intestines to those of indigestion and diarrhœa, more especially of infancy, while there is little worked out to a conclusion there is much of value to be applied in treatment. It is known that in the cases of indigestion accompanied by the eruction of gas and not a few cases of vomiting bacteria are playing an important role, often are the causes. Such cases of indigestion are usually characterized by the eructation of gas after meals and a sense of oppression due to the disturbed digestion and dilatation of the stomach. A certain small amount of lactic acid occurs in our food, the same is true of acetic acid, but butyric acid should be practically absent. In normal digestion a small amount of the first two is of no harm, and one of them seems to play an important part in the upper part of the intestines. Butyric acid is an offensive compound and acts as an irritant in the stomach. Any of these acids produced in quantity in the stomach are injurious, tend to cause and keep up catarrh. The gas given off during the production of the acids not only oppresses by unduly dilating the stomach, but must interfere with the mechanical action of that organ. We now know that the stomach does not lie across the body but more up and down, the pylorus being below. In this position the food tends to fall to the pylorus and is constantly worked up towards the cardiac end by muscular action, the more fluid parts running back and down into the duodenum. Gases, easily compressible as they are, must interfere with this pumping or driving motion and render the mechanical work of the stomach less effective impeding an intimate mixture of the food and gastric juices and thus hindering proper digestion.

As pointed out by Taube,[19] since the stomach dilates chiefly on the side of the greater curvature, hyper-extension brings the curvature below the pylorus. In this case all fluids will gravitate to the pocket thus formed instead of to and through the pylorus.

Recently Klemperer,[20] in studying the hydrochloric acid in the stomach has developed the fact that much of the disagreement as to the hydrochloric reaction in cases of cancer of the stomach, and dilatation depends upon the bacteria contained in the juices. The bacteria act in two distinct ways. First, according to the well known law that a mixture of acids combine with a base in quantities according with the strength of the acids, the various organic acids produced by fermentation drive out a small part of the hydrochloric acid. Second, other products of the bacterial growth as the ptomaines, form compounds with the hydrochloric acid sufficiently strong to prevent the bluing of methyl violet, but not sufficiently strong to resist the other tests commonly used. The acid thus combined is taken away from the digestive process, which is proportionately weakened. In normal digestion the amount of hydrochloric acid thus taken up varies from .6 to 1 %, while in a case of cancer it rose to 2.5 %.

Klemperer worked not only with the ptomaines produced by the growth of Brieger's bacillus in milk, but also with those isolated from the gastric juice in a case of cancer of the pylorus.

The diarrhœal troubles of adults have not been sufficiently studied bacteriologically, and little is known of them. In a few cases examined by myself the proportion of Brieger's bacillus to the other aërobic forms has been reduced, and two or three putrefying forms decidedly increased, among these the putrefying green fluorescing. Pure cultures of this plant give off an offensive odor closely resembling those of the stools from which they were taken.

In this connection it is interesting to note that the period of raw small fruit. salads and the like, is the period of intestinal troubles. In other words, the consumption of raw — that is, not sterilized — foods, which by their nature and surroundings are exposed to all sorts of bacteria, goes hand in hand with the prevalence of functional intestinal trouble. The small fruits are eaten whole, together with a hoard of bacteria, large fruits eaten later are peeled, that is, prepared, much like a potato for a pure culture.

On the whole, bacterial overgrowth in the stomach tends to the so-called ferments in the intestines to putrefaction.

Of the summer diarrhœas of infancy we really as yet know nothing specifically. Bacteria are very abundant, the putrefying group coming forward. Lately Escherich, in an article of which I have only been able to procure a notice, reports that the spiral forms are unusually abundant in cases of diarrhœa, but regards them as a result rather than cause of the trouble.

The only claim worthy of consideration to the discovery of a specific organism has been put forward by Lesage.[21] This author describes a form as constantly occurring in great numbers in the stools of a certain class of diarrhœas, the clinical aspect of which corresponds with an ordinary case with an elevated temperature. This plant produces a green coloring matter, is easily grown, and, according to the author, has a very bizarre method of development. Not only does the plant show a tendency to grow into threads, later splitting up into bacilli, but it produces endogenous spores, which in turn give off a number of daughter spores by budding, these growing into bacilli and threads. So far as known to me this is an utterly new method of growth among bacteria, indeed, removes the plant entirely from the class. Another peculiarity is that the spores are more rapidly and deeper stained than the vegetative cells. This plant, Lesage states, produces green diarrhœa if introduced into the intestines or stomach, and one syringe full introduced into the ear vein of a rabbit produced a slight green diarrhœa. The plant was recovered in the intestines. Pure cultures were found to be quite sensitive to lactic acid, so Lesage adopted a lactic acid treatment for these cases, giving large doses, and reports extremely favorable results, in fact, a specific action.

As yet no confirmation of Lesage's observations have come to hand. My own search for the plant in the few suitable cases to be found so early in the year have failed. The nearest thing to it found was the putrefying green fluorescing bacillus. This has a green color, but lacks all the other characteristics of Lesage's plant. Baginsky has discredited Lesage's results, and considers the plant to be the green fluorescing bacillus, which it certainly is not, for the plant

[19] Taube. Schmidt's Jahrbücher, 1887.
[20] Klemperer. Zeitschr. f. klin. Med., 1888, p. 147.
[21] Archiv de Physiol., 1888. Feb. 15th, p. 212.

has no such mode of growth. The entire thing is very strange, and needs abundant confirmation before being accepted. At the present time there seems to be no reason to expect a specific, but rather that the whole trouble begins as a reaction to noxious products of various species and runs on in the course of time from a condition of pathological physiology to one of pathological anatomy, loss of substance occurring in the epithelium.

With the growth of our knowledge of the active part played by bacteria in the various troubles of the alimentary canal a decided change has occurred in the treatment of the same. These changes have for the most part been instituted without any clear idea of their action, survived in virtue of their efficacy, to be later modified, perfected and guided by the light thrown upon them by bacteriology.

The recent changes in the treatment of gastric catarrh so ably presented in this journal by Knapp, at once reveal the fact that an efficient anti-germ treatment is now followed; not only is the stomach washed out, that is, the field weeded, but the soil mucous and refuse of food is removed, and a weak poison left in its place at times. The well-known use of creosote, sublimate and calomel probably owe their utility to their impairing the bacterial growth. Various efforts have been made to kill the unwelcome guests in the intestines by means of drugs. In the diarrhœas of infancy this subject has been attacked from three sides, by the use of drugs, by the care of the food, and by change of diet. All three methods are rational and worthy of use, often together. Other things being equal, modern physicians would eschew drugs, and the laity rush for them. They would rather take medicine than trouble. From a therapeutic side efforts have been made to find something to kill the plants and not the child. These drugs may be classed as mild antiseptics, as organic acids and antiseptics, soluble and insoluble. Barring Lesage, there does not seem to be any strong enthusiast in favor of the acids; though the curative effect of sugar has been pointed out by some. Sugar acts by being changed to acids in the intestine. With the germicides there is still quite a rage, due in large part to the assumed destruction of the germs. As a fact the germs are only slightly reduced in numbers by the most successful drugs. A drug to be antiseptic must be soluble, if soluble it is at once taken up by the intestines, thus being removed from where it is wanted and put where it is not wanted in the child's system. If insoluble, or rather slowly converted into a soluble active form, the action is weak, and absorption still occurs, only in small quantities throughout the gut instead of all at once in the upper part. Reasoning gives hope of but slight success with germicides, while the great number of things recommended strongly suggests insufficiency of all. Were any drug markedly successful the others by selection would quickly be excluded.

Again, if, as appears, Escherich's ideas of the value of his lactic acid bacillus are correct, we would by the use of germicides only open the field to any form that might chance to gain access.

Possibly there is hope of better results to be obtained by the use of drugs directed, not to the destruction of the germs, but to the alteration of their poisonous products. No effort seems to have been made to attain this result, except by the administration of acids and alkalies. I have suggested that iodoform [27] may have this effect. It certainly removes odor from putrid fluids quickly, though it does not kill the bacteria. This may be a simple case of concealment, but as the effect is a half-hour in development it is doubtful. We know that the administration of iodoform removes the aromatic compounds from the urine. Unfortunately, iodoform is decidedly poisonous, causing fatty degeneration, and its products secreted in the saliva combine with the metals of our eating utensils to form most revolting compounds in the mouth.

Naturally it has long been the custom when the infant suffered on one kind of food to change to another. Thus peptone solutions, albumens, and various starch and dextrine solutions are still much used; to say nothing of the various patent foods consisting when given, of cow's milk, starch and its derivatives. Wine whey, a very old preparation, seems to have dropped out of use in this vicinity, but still holds its own in England and Ireland.

All these efforts to find a more satisfactory food have been the natural result of failure, and directed purely on empirical grounds; often change after change being made until a successful food was hit upon or the child died. Escherich's work now opens the field to more intelligent work. The secret of the value of change of food according to him lies in the effect upon the bacteria. Some of these attack the starches, others sugars, or both sugars and starches, while at the opposite end of the series albuminates are attacked and putrefaction results.

Either group, ferments or putrifiers, is undesirable. The ferments act by the production of various acids, chiefly from the milk sugar. In small amounts, as in the case of bacillus lactis aërogenes, the acid seems to be of benefit, certainly does no harm as it regularly occurs in healthy breast-fed infants. In larger amounts, however, it must tend to over-acidify the contents of the intestines and upset the action of the digestive fluids.

Bokai [28] has recently shown that the various organic acids have a very decided effect on the motion and blood-supply of the intestines. The intestines of rabbits were exposed in a warm normal salt solution bath. All the acids were found to increase peristalsis, lactic, succinic and acetic acid with constriction of the bloodvessels; valerianic, butyric, formic, propri-onic, capric and caprylic acids with dilatation of the same. One or two grammes exhibited by the mouth produced diarrhœa, smaller doses a catarrhal state, and larger a positive inflammatory state.

These observations pave the way to Baginsky's theory, practically an acceptance of Escherich's ideas, that the lactic acid bacillus growing in superabundance irritates the digestive tract, causing diarrhœa, and if continued, brings about its own death by the superabundance of acid produced. In this case the acid is quickly passed on and the gut is left open to the putrefying alkali frequenting forms.

The value of Escherich's work here comes in; he suggests that the change of food should be governed so as to starve out the rampant ferment. If the ferment is an acid one, to give a food free from sugars and starches, if an alkaline one, free from albumens and

[27] Jeffries. Am. Jour. Med. Sciences, 1888, January. Behring has just shown this to be true of cadaverin. Deutch. Méd. Woch., Aug. 9, 1888.

[28] Bokai. Archiv. f. Experim. Path. u. Pharm., 1887. Vol. xxiv, p. 153.

calculated to encourage the lactic acid bacillus to a normal growth. In the first case Escherich suggests peptone solutions, in the second, dextrine solutions.

Baginsky accepts Escherich's principles, but claims that he has forgotten the child and that empirics have their place. He points out that peptones are known to be poisonous if introduced into the system, and often cause diarrhœa. Unfortunately, Baginsky is not clear as to what should be given. Dextrine is also objected to on account of the impurities contained and milk sugar suggested as a substitute.

Lastly, Escherich has refuted Baginsky's objections and referred to the favorable results obtained by Ehring. That cane sugar, glycerine, dextrine and starch stop putrefactive processes in the intestines is proved by Hirschler's experiments. This author showed that the products of decomposition were absent in urine and fæces of animals treated with these foods.

Baginsky attaches great value to calomel in the early stages, on purely empirical grounds, since Morax has shown that the drug does not affect the aromatic group.

It is probable that kephir will prove to be a valuable food in the cases of acid diarrhœa. This is milk fermented by the kephir grains composed of two or more kinds of bacteria. By the growth of the plants the milk sugar is broken up; alcohol, lactic acid, carbonic dioxide and hydrogen being formed. The injurious constituent of the milk, the sugar, is removed, and the casein is curded in fine flakes and so cannot form a mass in the stomach.

Is the reaction of the stool a sufficient index to the ferment in the intestine? Escherich thinks it is, Baginsky and Vaughn[24] doubt it. Here the study of the urine by Morax,[25] Baumann,[26] and Hirschler[27] come into play. These authors have shown that the sulphuric ethers and aromatic compounds of the urines vary with the amount of putrefaction in the intestines. Thus by a quantitative analysis an exact knowledge of the ferment is to be obtained.

Though not treating of bacteria in the intestines, Vaughn's work on tyrotoxicon cannot be passed by, and leads the way to the last and most radical part of the subject, prophylaxis. Vaughn has isolated from milk, ice-cream, and the like an active poisonous compound, which produces symptoms much like those of cholera infantum. This compound, diazobenzol, is produced in milk excluded from the air, and at a temperature of at least 60°. The bacterium producing the trouble has not yet been found. It is very likely an anaërobic species.

Vaughn's article suggests that the tyrotoxicon plant may be the cause of cholera infantum, but does not frame the idea.

Very recently, Behring[28] has announced that cadavarin, pentamethylindiamin, produces death in guinea-pigs, with symptoms and post-mortem resembling Koch's artificial cholera in the same. Cadavarin is freely formed by the cholera bacillus in alkaline solutions, commonly occurs in decaying bodies, as indicated by its name, and may be, therefore, an element in the diarrhœas of infants and adults.

Taking up the subject of prophylaxis, it is clear that the general laws of health must be attended to, that mother's milk is better than cow's milk, and, as shown by Rotch,[29] that quantity and quality of all foods must be attended to. Over and above this, the feeling that the summer diarrhœas are due to changes in the food, that is, to bacteria in the same, has been steadily gaining ground for some time.

With this consideration in view, great care has been given to the food-supply, ice employed, and the like; also cooked food given.

In 1886, Soxhlet[30] published an article recommending the sterilization of milk by immersion in boiling water for forty-five minutes, the flasks containing the milk to be closed after being heated. Soxhlet made no bacteriological study of the subject, and simply took the curdling of the milk as a sign of infection. Measured by this standard, the milk kept about three weeks. Unfortunately, milk becomes full of bacteria and seriously altered before curdling occurs, and certain species do not curdle milk. Soxhlet kept the deadly, long sucking-tube, and advocated a very complex apparatus of bottles, cages, and water-baths.

In the summer of 1884, my attention was first directed to steaming the milk for infants, being guided by the custom of housewives. Receipts are to be found in the cook-books for preserving milk and cream for a long time, the principles of which are the addition of a moderate amount of sugar, then bottle, and all to be heated in boiling water for some time, the cork, also scalded, to be driven home while the whole was hot. In short, the whole of Soxhlet's method packed in a nutshell.

In 1887, on returning from Europe, my attention was again called to the subject, and every child under my care put, as far as possible, on steamed milk. Being pleased with the results, and learning that Dr. Ernst had used a similar method for three yeara, I determined to work the subject out from a bacteriological point of view, and obtain some reliable, simple method capable of general cheap application. The results were published in a paper,[31] from which I quote:[32]

"Stopper the flasks (that is, those from which the child is to be fed) with cotton-wool, and heat them in the oven for thirty minutes at a mild baking heat, or until the cotton becomes brown. Pour the requisite quantity of food into the flask, and then place in the heated steamer for fifteen minutes."

If this method is followed, the milk will keep for a long time practically free from bacteria and their injurious products. The first rule is a refinement, and, in view of the work of Wolfhügel and Beidel,[33] desirable. These authors have shown that pathogenic germs in washing water could cling to the vessels and infect milk put in them.

The steaming must be thorough, but any simple steamer will do, provided it is filled with live steam. The milk should be steamed *at once* on receipt from the milk-man; otherwise the child will get a sterile food already charged with the poisons of decomposition.

No expensive and complex apparatus is needed, and on a pinch an ordinary medicine-bottle placed in the

[24] Vaughn. Medical News, 1888. Practitioner, 1886, p. 232.
[25] Morax. Zeitschr. f. physiol. Chemie, 1886, p. 318.
[26] Baumann. Zeitschr. f. physiol. Chemie, 1886, p. 123.
[27] Hirschler. Zeitschr. f. physiol. Chemie, 1886, p. 306.
[28] Behring. Deutsch. Med. Wochenschrift, June 14, 1888.
[29] Rotch. Archiv. for Pediatrics, August, 1887.
[30] Soxhlet. Münch. Med. Wochenschrift, 1886, p. 258.
[31] Jeffries. Am. Jour. Med. Sciences, May, 1888.
[32] Soxhlet's article was not referred to in my paper, as I did not then know of it, nor, indeed, have I been able to find any person present at the time it was read who had seen Soxhlet's article.
[33] Wolfhügel u. Riedel. Arbeit a. d. kaiserl. Gesundheitsamt., I, 1886.

tea-kettle will nearly fill the requisites. Cotton-wool is the proper stopper; it cannot be blown out, hence can be put in before steaming, and is germ-tight. Any stopper put in after steaming is not itself disinfected. When the child is to be fed, take out the cotton plug and put on a short rubber nipple. It is absurd to struggle with a sterile mouth-piece so long as the infant's mouth is swarming with bacteria: the value of the method lies in the integrity of the milk.

We thus see that a good start has been made, much knowledge gained, and much to be looked for. The very gaps in our knowledge show that the subject is a far-reaching one. Bacteria form a part, perhaps large part, in the balance of forces in the intestines, which results in normal digestion. Any disturbance, be it from the food, bacteria, or the intestines, throws the balance out and results in disease.

OBSERVATIONS ON THE SURGICAL TREATMENT OF MALIGNANT GROWTHS.[1]

BY MAURICE H. RICHARDSON, M.D., OF BOSTON.

Tumors of the Testicle. — Next in death-rate come tumors of the testicle. Seven out of nine are now dead. Of the living, one was probably tuberculosis, and the other a large-celled sarcoma. One died from the operation, one in two months, one in four, one in five, one each in nine, eleven and fifteen months. This is a very unfavorable showing, yet excision seems to be the duty of the surgeon, with the usual care in the consideration of the contraindications. The cord should be ligated as high up as possible, and any glands in the groin removed. The presence of glands affected beyond Poupart's ligament of course contraindicates the attempt.

Epitheliomata of Face and Scalp. — Cases heard from, 67; not heard from, 47; total, 114. Living, 34; without recurrence, 22; with recurrence, 12.

1878. Cases, 8. Living, 1. Dead, 7 — 1 at 24 m., 1 at 84 m., 1 at 84 m., 1 at 10 m., 1 at 96 m., 1 at 72 m., 1 at 12 m.
1879. Cases, 5. Living, 3. Dead, 2 — 1 at 48 m., 1 at 84 m. (no recurrence).
1880. Cases, 14. Living, 4. Dead, 10 — 1 at 72 m. (suicide), 1 at 16 m., 1 at 12 m., 1 at 36 m., 1 at 41 m., 1 at 84 m. (suffocated by gas), 1 at 7 m., 1 at 7 m., 1 at 30 m., 1 at 48 m.
1881. Cases, 4. Living, 2. Dead, 2 — 1 at 13 m., 1 at 60 m.
1882. Cases, 10. Living, 4. Dead 6 — 1 at 29 m., 1 at 5 m., 1 at 12 m., 1 at 31 m., 1 at 72 m. (old age), 1 at 13 m.
1883. Cases, 11. Living, 7. Dead, 4 — 1 at 11m., 1 at 18 m., 1 at 22m., 1 at 9 m.
1884. Cases, 2. Living, 2. Dead, 0.
1885. Cases, 6. Living, 5. Dead, 1. 1 in hospital.
1886. Cases, 7. Living, 6. Dead, 1 — 1 at 22 m.

Cases, 67. Living, 34. Dead, 33. Av. 37 m.

I consider that this is one of the most important classes of cases. The number of operations on these as on many of the other classes has been much greater than the records show, because the milder cases have been treated as out-patients. The high death-rate in my list is due to this fact in part. I have no doubt that the percentage of cures among the out-patients has been very high indeed, because this form of cancer is one of the least malignant at the outset, and most easily cured by proper treatment.

Of one hundred and fourteen cases I have heard from sixty-seven, of which thirty-four are living and thirty-three dead. One has lived ten years; three, nine years; four, eight years; two, seven years; four six years; seven, five years; two, four years; five, three years; six, two years.

Of the thirty-three dead, there was no recurrence in four; two of whom died of old age, one was suffocated by gas, and one suicided. The average duration of life was thirty-seven months. One lived ninety-six months, four lived eighty-four, three seventy-two, one sixty months, etc., etc. One died from operation.

The replies which I have received in these cases have shown, in a most graphic way, the terrible ending of life in this form of malignant disease. No other class of cases emphasizes more strongly the importance of early excision, even to mutilation, in the early stages. Certainly no other form of cancer offers greater hope of cure than this, unless it be epithelioma of the lip when radically excised. I would advocate most strongly the earliest possible excision in all cases where the disease shows a tendency to penetrate to the deeper parts, or to invade such structures as the eye. In the superficial varieties where there is nothing but a scab on the skin, where the disease is hardly more than a keratosis, the curette or the cautery may be used, and in many of these cases such treatment has been followed by cure. But in the deeper kinds, where, for example, there is a deep ulceration of the inner canthus, I would advise and perform excision so deep and thorough as to ensure a healthy margin, *regardless of* any other parts whatever, even to enucleation of the eyeball. Here again we have to meet the natural objections of the patient, but our duty is not done till this has been impressed upon his mind. I have no doubt that some of the fatal cases in this list were useless operations. One at least was my own, which I should not for a moment think of undertaking now, where the cheek was extensively infiltrated, but no glands were involved as far as I could make out. Unless a wide margin is sure the disease should be let alone as far as any operation for cure is concerned.

In this connection I would like to say a word in regard to the use of the curette and the actual cautery. In the superficial cases nothing could be more satisfactory than the curette, or perhaps the cautery. Where the deeper layers of the skin have become involved or the subcutaneous tissues, I believe that these methods are worse than useless, — that is, as a means of cure. Both methods must fail of complete removal because it is impossible to see and recognize the healthy tissues when they are reached.

Cancer of the Lip. — Probably no class of cases offers a better outlook than this, if taken early, and if thoroughly treated. Of seventy-five cases, most of them severe, I have heard from fifty-one, with twenty-six living and twenty-five dead.

1878. Cases, 4. Living, 0. Dead, 4 — 1 at 12 m., 1 at 12 m., 1 at 12 m., 1 at 108 m.
1879. Cases, 6. Living, 2. Dead, 4 — 1 at 56 m., 1 at 12 m., 1 at 24 m., 1 at 11 m.
1880. Cases, 3. Living, 1. Dead, 2 — 1 at 29 m., 1 at —.
1881. Cases, 7. Living, 4. Dead, 3 — 1 in hospital, 1 in 60 m., 1 in 29 m.
1882. Cases, 5. Living, 2. Dead, 3 — 1 in 13 m., 1 in 10 m., 1 in 18 m.
1883. Cases, 6. Living, 3. Dead, 3 — 1 in 5 m., 1 in 23 m., 1 in 15 m.
1884. Cases, 5. Living, 3. Dead, 2 — 1 in 9 m., 1 in 29 m.
1885. Cases, 4. Living, 3. Dead, 1 — 1 in 25 m.
1886. Cases, 11. Living, 8. Dead, 3 — 1 in 24 m., 1 in 12 m., 1 in 15 m.

Cases, 51. Living, 26; dead, 25. Av. $26\frac{5}{51}$. Died without return, 4. Died of original disease, 21.

[1] Concluded from page 196.

1878 — no cases lived 10 years. 1879 — 2 lived 9 years. 1880 — 1 lived 8 years. 1881 — 4 lived 7 years. 1882 — 2 lived 6 years. 1883 — 3 lived 5 years. 1884 — 3 lived 4 years. 1885 — 3 lived 3 years. 1886 — 8 lived 2 years. Total, 28 cases living. With recurrence, 2; no return, 24.

As in the previous class, but one died from the operation.

The recurrence is very much more likely when the submaxillary lymphatics have been involved. I would not say that such infection is a contraindication, unless there is a large and adherent mass in the neck. The invasion of the jaw, also, makes the outlook very serious. Where, however, the cheek is infiltrated to any extent, and the lymphatics below the jaw are invaded, as well as the jaw, it seems to me that the case offers so little hope of permanent cure as hardly to justify an operation.

In early cases, it is important to bear in mind that the wider the margin, the better the chances of cure, and also that the lip is a very elastic thing. One thinks he is leaving a very wide margin when the lip is stretched, but examination of the shrunken part when it has been excised often shows a very narrow one. I would leave at least half an inch of healthy lip on each side of the V. It is a good rule in this operation, as in all others for malignant growths, where it is practicable, to excise the tumor with a wide margin in every direction, and then, and *then only*, consider the question of closing the hole.

Cancer of the Penis. — Cases, twenty. Replies, ten. Living, six; dead, four. Two are living at eight years, one each at seven, six, five, and three years. One dead in twenty months, and one each in seven, seven, and eight months. One of the dead had circumcision, one curette, and two were amputated. In one of the amputations the inguinal glands were dissected out. In one of the living, amputation followed circumcision. In another, circumcision was done seven years ago. In the remaining four, amputation was done at first.

I believe that all cases of cancer of the penis should be treated by amputation well down to the pubes, except in the most trivial and circumscribed ones. The adoption of so radical a rule in all cases as early as possible would, in the absence of glandular infection, bring the percentage of cures very high indeed.

As a method of cure, I think the curette or cautery a waste of time.

Malignant Disease of the Extremities. — Cases, eighty-nine. Answers, fifty-six. Living, thirty-seven; dead, nineteen.

1 lived 24 m.		1 recurrence at 3 m.	
1 " 36 m.		1 " 4 m.	
1 " 24 m.		1 " 2 m.	
1 " 84 m.		1 " 2½ m.	
1 " 4 m.		1 " 9 m.	
1 " 4 m.		1 " 20 m.	
1 " 12 m.		1 " 4 m.	
1 " 37 m.		1 " 1 m.	
1 " 6 m.		1 " 4 m.	
Average duration of life, 25⅔ m. in 9 fatal cases.		1 " 13 m.	
		1 " 36 m.	
Died from operation, $\frac{1}{9} = 11.2\%$		1 " 18 m.	
Total dead, 19. In hospital, 10.		Average recurrence, 11½ m.	
Died subsequently, 9. Died subsequently, without recurrence, 1. Died from original disease, $8 = 14.2\%$		Living, with recur'nce,	$1 = 1.7\%$
		" without "	$35 = 62.5\%$
		" with 3 "	$1 = 1.7\%$
		Total living . .	37

It is in this class of cases that we may achieve brilliant results by early and radical operation, and in no other may the failure be more dismal and complete by the use of half-way measures. The same rules of treatment apply here as to other parts, and the same contraindications. What I would urge is the more frequent resort to amputation in those cases which do not admit of satisfactory removal of the part itself. In infiltrating epitheliomata of the hand, sarcoma adherent to the bone, invasion of the lymph glands of the elbow or the popliteal space, without infection of the groin or the axilla, all forms of malignant disease of the bones — in all these amputation well above the diseased parts should be advised and performed, if the patient can be made to realize the necessities of the case. An analysis of these fifty-six cases will show most gratifying results of amputations, as compared with excisions of the tumors themselves. I have not had time to do this, but reserve it for a future paper.

Cancer of the Breast. — The number of tumors of the breast removed from November, 1877, to January, 1886, has been two hundred and seventy-four. I have received replies from one hundred and sixty-three. Of these, ninety-five are dead and sixty-eight living. Of the sixty-eight living, seventeen were not malignant. This leaves fifty-one living out of one hundred and sixty-three, 36 %. Of the living, I have found that eighteen were determined to be malignant by microscopic examination. In nineteen there was recurrence, twelve of which had not been examined by microscope, or, at least, the examination I have not as yet found. This would make the diagnosis of malignancy in the original tumor certain in thirty cases, recurrence being even more certain than microscopic examination.

There were twenty-three cases of death from the operation out of the whole number of two hundred and seventy-four, or 8.3 %. In the cases of cancer of the breast from the foundation of the Hospital to 1871, the mortality from the operation was twenty-three in two hundred and ninety cases, or 7.9 %. This, at first glance, is surprising, for the cases I have collected have all been done since the introduction of antiseptics. But the increased mortality is due to the greater thoroughness and severity of the operation.

The date of recurrence in sixty-two cases is 14.2 months. The longest immunity has been sixty-three months, and the shortest one month.

Cancer of the breast I have considered first in importance from the greater number of cases. From the tables it will be seen that the number of operations has not diminished during the past ten years. During 1887 and 1888, the number has been larger than ever before, and I venture to assert that the results will be more favorable. It does not seem to me justifiable to say, even in the face of these imperfect statistics taken from the Massachusetts General Hospital, many of them in Dr. Hodges's own service, that the operation is not successful enough to warrant renewed efforts, or that the operation is or is likely to be a thing of the past.

The percentage of deaths from operation is not large. Even with antiseptics, it seems to me that some must necessarily occur. The deaths from preventable causes have been surely diminishing. The operation, as it ought to be done, is a formidable one, but with a mortality of only eight per cent. it is not sufficiently great to weigh against the large percentage of permanent cures which is, I believe, sure to result from increased thoroughness of removal.

At my first operations on cancer of the breast in 1880, I determined to attempt to perform this operation in the most thorough and radical manner, espe-

cially as regards the axilla. I have since operated in about sixty cases. The results I do not know, except in a few cases done at the Massachusetts Hospital. In these the percentage of living has been large, and I think it is due to the method of dissecting the axilla. In all the cases where the disease has returned, it has appeared in the scar of the breast, and not in the axilla.

DEATHS IN CANCER OF BREAST.

Year.	No.	Answer.	No Answer.	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	LIVING.	Per et. living 1885.	Per cent. dead within three years.
1877	2	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..
1878	35	18	17	4	5	3	..	1	1	2	..	..	..	..	3	16⅔	66⅔
1879	36	26	10	..	7	5	3	1	1	1	..	..	..	..	6	23	57 1/10
1880	27	14	13	..	..	1	3	2	1	2	..	..	1	..	7	50	21 4/10
1881	22	11	11	..	..	..	3	2	1	2	1	..	..	..	3	27	54 5/10
1882	17	11	6	..	..	..	..	2	3	1	1	..	..	..	4	36	54 5/10
1883	33	26	7	..	..	..	..	..	5	2	4	2	..	..	11	42	42 8/10
1884	27	15	12	..	..	..	..	..	..	1	2	1	1	..	10	66⅔	26 4/10
1885	33	19	14	..	..	..	..	..	..	..	4	3	3	..	9	47	52 6/10
1886	42	22	20	..	..	..	..	..	..	..	..	4	2	1	15	68	32
	274	163	111	5	12	9	10	6	11	11	11	10	9	1	68		
				Dead								Total,			95		163

The method I have adopted, though there is, so far as I know, nothing new in it, is to make such a dissection of the axilla as I have made in the dissecting room. The incision is carried from the breast along the edge of the *pectoralis major* across the axilla and down the arm, directly over the axillary vein. All the tissues down to the *serratus magnus* are removed with a knife by a clean dissection, so as to take out all the lymphatic vessels. The axillary fat is then excised, and the axillary vein found and fully exposed as a landmark for future dissections, on the ground that the vessel is most easily avoided when its position is shown in full view. The aponeurosis which holds in the axillary fat and is attached to the coracoid process is next incised freely, which allows free dissection with the scalpel in and around the axillary structures. The fat can be separated from the vessels and nerves by clean incision till the whole is removed. I have never made this dissection in any case where I have not found some of the glands affected, even when nothing could be felt on the outside. The investigations of Dr. Whitney have also shown that this mass of fat contains, or may contain, clusters of cancer cells wholly independent of the glands, even when the glands themselves are not visibly affected. Other observers have found the lymphatics affected with malignant disease, even when not perceptibly enlarged.

CANCER OF BREAST — FIRST RECURRENCE.

No. 1.... 5 m.	No. 22.... 8 m.	No. 43....30 m.
2.... 4 m.	23.... 3 m.	44....17 m.
3.... 2 m.	24....12 m.	45....48 m.
4....63 m.	25....29 m.	46.... 6 m.
5....38 m.	26....24 m.	47.... 9 m.
6....24 m.	27.... 6 m.	48....60 m.
7.... 6 m.	28....29 m.	49.... 3 m.
8.... 5 m.	29....41 m.	50.... 6 m.
9.... 7 m.	30.... 3 m.	51.... 4 m.
10....43 m.	31.... 2 m.	52....23 m.
11.... 2 m.	32.... 6 m.	53.... 1 m.
12.... 8 m.	33....30 m.	54....12 m.
13....60 m.	34.... 8 m.	55.... 2 m.
14....10 m.	35.... 1 m.	56.... 7 m.
15.... 4 m.	36....30 m.	57.... 4 m.
16.... 6 m.	37....24 m.	58.... 1 m.
17.... 8 m.	38.... 6 m.	59....10 m.
18.... 5 m.	39....12 m.	60....16 m.
19.... 3 m.	40.... 5 m.	61.... 1 m.
20.... 3 m.	41....12 m.	62.... 5 m.
21....12 m.	42.... 3 m.	
		882 m.

Longest period of recurrence	63 m.
Shortest	1 m.
Average	14.2 m.

LIVING CASES.

No.	Date.	Microscopic Examination.	Cancer.	Sarcoma.	Recurrence.	Time.
1	1878	No	Yes	..	No	10 yrs.
2	1878	No	Yes	..	No	10 yrs.
3	1879	Yes	..	Yes	2	9 yrs.
4	1879	Yes	..	Yes	3	9 yrs.
5	1879	No	Yes	..	2	9 yrs.
6	1879	No	Yes	..	No	9 yrs.
7	1879	No	Yes	..	No	9 yrs.
8	1880	No	?	?	No	8 yrs.
9	1880	Yes	Yes	..	6	8 yrs.
10	1880	No	..	Yes	No	8 yrs.
11	1880	No	Yes	..	Yes	8 yrs.
12	1880	No	Yes	..	No	8 yrs.
13	1880	No	Yes	..	No	8 yrs.
14	1881	No	Yes	..	Yes	7 yrs.
15	1881	No	Yes	..	No	7 yrs.
16	1882	No	Yes	..	Yes	6 yrs.
17	1882	Yes	Yes	..	No	6 yrs.
18	1882	Yes	Yes	..	Yes	6 yrs.
19	1883	Yes	..	Yes	No	5 yrs.
20	1883	No	Yes	..	No	5 yrs.
21	1883	Yes	..	Yes	No	5 yrs.
22	1883	No	Yes	..	No	5 yrs.
23	1883	No	Yes	..	Yes	5 yrs.
24	1883	No	..	Yes	No	5 yrs.
25	1883	No	Yes	..	Yes	5 yrs.
26	1883	Yes	No	Yes	No	5 yrs.
27	1883	No	Yes	No	Yes	5 yrs.
28	1884	No	Yes	No	Yes	4 yrs.
29	1884	No	Yes	No	No	4 yrs.
30	1884	No	Yes	No	Yes	4 yrs.
31	1884	No	Yes	No	No	4 yrs.
32	1884	No	Yes	No	Yes	4 yrs.
33	1885	No	Yes	No	Yes	3 yrs.
34	1885	Yes	Yes	No	No	3 yrs.
35	1885	Yes	Yes	No	No	3 yrs.
36	1885	No	Yes	No	..	3 yrs.
37	1885	Yes	No	Yes	No	3 yrs.
38	1885	Yes	Yes	No	3	3 yrs.
39	1885	No	Yes	..	No	3 yrs.
40	1886	Yes	..	Yes	No	2 yrs.
41	1886	Yes	Yes	No	No	2 yrs.
42	1886	No	Yes	..	Yes	2 yrs.
43	1886	No	Yes	..	No	2 yrs.
44	1886	Yes	Yes	..	Yes	2 yrs.
45	1886	No	Yes	..	No	2 yrs.
46	1886	No	Yes	..	No	2 yrs.
47	1886	Yes	..	Yes	No	2 yrs.
48	1886	Yes	Yes	No	Yes	2 yrs.
49	1886	No	Yes	..	No	2 yrs.
50	1886	Yes	Yes	..	Yes	2 yrs.
51	1886	Yes	Yes	..	No	2 yrs.

These investigations alone show the necessity of dissecting out the axilla in all cases. There is no doubt that this method adds to the danger, as well as to the discomfort and impairment of the arm. Dr. Mixter has advocated a little different incision; namely, to carry the axillary cut well up on the *pectoralis major*, so as to close the axilla by untouched skin, which he fastens deeply to one of the serrations of the *serratus magnus* by means of a deep stitch. I have had little experience with this method, but it is claimed for it that there is little or no impairment of the movements of the arm afterward.

There is no doubt that this method, which ought to be followed in all malignant tumors of the breast, makes the operation a most formidable one. It is not an easy task to remove all the fat from the axilla without wounding any of the important structures it contains. Wounding the axillary vein is the greatest danger as regards immediate results, and is generally fatal in a short time. There is not so much danger of injury to either artery or nerve. There is, nevertheless, little excuse to be offered for cutting so large and prominent a vessel as the axillary vein, if the operator has ordinary skill and experience with the knife.

I do not agree with those writers who say that dissection of the axilla does not add to the dangers of the operation. It seems to me as absurd as to say that amputation of the thigh is no more dangerous than that of the leg. I have no doubt that it increases the mortality fully fifty per cent.

Another point in the operation of the greatest importance is the removal of plenty of skin over the tumor. I agree with Gross (*Am. Jour. Med. Sciences*) that the skin over the whole breast should be removed. It is here that the recurrences have taken place in all my cases, where any has appeared at all. I feel the importance of this method so much that I am almost inclined to say that in cases where the whole breast is involved, and where enough skin has been left to make a first intention possible, the operation has not been radical enough. I have several cases in mind where there has been long immunity, in which the wound healed by granulations entirely. One of the last cases I saw was found to have cancer infiltration in the skin outside the cut before the patient left the table, shown by fresh section and microscopic examination.

I would not operate in a case where there was infiltration of the skin to any extent, or where glandular infiltration could be detected above the clavicle, or where the axilla was filled with a large adherent mass of glands. Where internal organs are shown to be diseased, or the general condition of the patient is bad, I would not, of course, interfere.

I do not agree with Butlin ("The Operative Treatment of Malignant Disease") as to the partial removal of the breast. Where the microscope has shown the existence of cancer, I would take away the whole of the gland and the skin over it, as well as everything below it down to the pectoral, and, moreover, I would take with the gland the tissues about it, especially on the side next to the tumor.

I feel certain that if we follow this method of selecting the cases, especially, as I said in the introduction, if we incise every lump in the breast as soon as it is discovered, and subject it to the microscope; and when it is malignant, if we follow the method I have been advocating during the past eight years, we shall be able to effect a permanent cure in a much larger percentage than hitherto.

In conclusion, I would say that I believe we are going to operate by improved methods upon cases much earlier discovered and recognized, and more carefully studied, with very much better results. The average operation is going to be more radical, it will be more thorough and more formidable, and more truly conservative, because it will only be performed when its most radical performance promises the greatest good; namely, at the beginning of the disease, and not when the near approach of dissolution has made it, as too often in the past, the most forlorn of forlorn hopes.

REPORT ON PROGRESS IN THORACIC DISEASE.

BY FREDERICK C. SHATTUCK, M.D.

THE TREATMENT OF CHRONIC DISEASE OF THE MUSCULAR TISSUE OF THE HEART.

At the recent Congress for Internal Medicine a session was given to this subject.[1]

Oertel,[2] the referee, strongly advocated his method of treatment of these conditions by limitation of the ingesta, particularly fluids, and systematic exercise. Further experience has simply confirmed his first published opinions. The results claimed by him are summarized as follows:

(1) Invariable success in the later stages of fat-heart, uncomplicated by sclerosis of the coronary arteries, occurring mostly in persons advanced in years with serous plethora, venous stasis, and often œdema.

(2) Restoration of ruptured compensation and compensatory hypertrophy in cases of valvular disease, and impaired pulmonary circulation due to vertebral disease.

(3) Disappearance of marked dilatation of the heart-muscle — so far as it was not compensatory — dependent on weakness of the muscle, and increase of the intracardial pressure in valvular disease.

(4) As far as may be, the restoration of equilibrium between the arterial and venous systems, with relief to cyanosis, serous plethora, and an unduly watery or even œdematous condition of the tissues.

(5) Relief, partial or complete from respiratory symptoms. Further experience is needed to determine the permanency of the gains which result from this treatment. The first case reported by the referee — said, by the way to be his own — proves that the duration may be considerable. It is now thirteen years since treatment was begun, the loss of compensation with serious circulatory disturbances and œdema having existed for a year at that time, and the gain is perfectly maintained to-day. The prognostic value of this case is undeniable.

Lichtheim, the co-referee, thinks that Oertel's claims are excessive. His paper is summarised as follows:

(1) I consider Oertel's method eminently suited to those forms of chronic heart disease arising from immoderate eating and drinking and insufficient bodily exercise.

(2) In those affections, on the other hand, which are traceable to the distending influence of excessive physical exertion, or other cause, Oertel's method is of no avail.

[1] Beilage Zum Centralblatt für Klin. Med., 1888, No. 25.
[2] Vide Report on Progress Journal, 1887. I, p. 203.

In these exertion is only to be allowed when the compensation is tolerable, and it should then be graded. Patients of this sort must be treated much more cautiously than those with valvular disease.

(3) The administration of digitalis, strophanthus and caffein is and remains the proper treatment for impaired compensation; where it fails the dietetico-mechanical does not succeed. Oertel's method may aid the drugs in removing the dropsy, but can never take their place.

(4) As long as the compensation is intact there is no reason to give drugs, except as now and then a symptom calls for interference. This is a period when diet and exercise are in place, and the principles laid down by Oertel, applied with judgment, may do good service. It should be added that Lichtheim is at variance with Oertel also as regards a more theoretical point. The latter believes that the blood is in a watery, dilute condition, in cases of failure of the heart-wall; but the former holds it as demonstrated that in uncompensated heart disease the concentration of the blood is not diminished, nay, that when dropsy is present the concentration may be increased.

Kisch endorsed this observation of the previous speaker, and added that experiments of his own showed that the blood of highly obese persons contains an increased rather than a diminished amount of red corpuscles, and also of hæmoglobin. Oertel's idea that there is in these two classes of cases a serous plethora is, therefore, erroneous. He also agreed with Lichtheim that the chief danger in disease of the muscular structure of the heart lies in stretching the muscle. Microscopic study of the hearts of fat people and of overfed geese have convinced him that fatty degeneration of the heart muscle is long delayed in these cases, and results from the pressure exerted on the bundles of muscular fibres by the growth of fat between them. But, before any degeneration occurs, the efficiency of the cardiac contractions is impaired by the load of fat on and in the wall.

In short, Oertel's treatment is applicable to only a very limited number of cases.

Fræntzel also expressed himself as in agreement with Lichtheim.

Schott (Nauheim) has convinced himself that Oertel's theory of the existence of hydræmic plethora in cardiac cases as the result of increased ingestion of fluid is mistaken. Hill-climbing is a form of exercise much better adapted to the end than the beginning of treatment; for the reason that it is difficult of control and accurate dosage, so to speak.

Riegel finds it incomprehensible that the sweeping statement should be made — and it has been made repeatedly — that the dietetico-mechanical treatment is indicated in valvular disease in general. The different valvular lesions do not call for precisely the same treatment; more discrimination must be exercised than is common.

FATTY DEGENERATION OF THE HEART FROM INTRA-ABDOMINAL PRESSURE.

Bedford Fenwick [3] gives a more detailed analysis of the twenty-two cases coming under his observation. The average duration of the abdominal distension was 22.7 months, the average age of the patients forty-four years. Sixteen of the cases were ovarian, three fibro-cystic of the uterus, two renal, one omental cyst. The diagnosis of the cardiac degeneration rests on: (1) A feeble and diffuse impulse, the sounds being dull at the apex, especially over the right ventricle. (2) A small, feeble and compressible pulse, fast or slow, but unduly accelerated by the slightest exertion, perhaps as much as thirty or forty beats a minute. (3) A tendency to local anæmiæ and local congestions, pallor of the skin, a tendency to faintness, even going on to syncope, and a constant inclination to yawn or sigh, or even a marked condition of dyspnœa, the age of the patient and the duration of the swelling are also to be taken into account.

The prognosis in advanced cases bad. The earlier the affection is recognized, and the sooner the determining cause can be removed, the better the patient's chances. An important practical lesson is not to delay operation too long. If the tumor cannot be removed, the pressure dangers should be prevented by early, and if necessary, by repeated tapping.

MOVEABLE HEART.

Rumpf [4] reports five cases in which the heart, as was shown by the seat of the impulse and the area of dulness, changed its position in the thorax to an unusual degree in accordance with the position of the patient. In the most extreme case, the impulse in the erect posture was 61 to 62 cm. from the left sternal border; in the right lateral position it was just to the left of the sternum; in the left lateral in mid-axilla; the distance between these two extremes was 13 to 14 cm. The symptoms were inability to lie on either side without pain, oppression, and increased rapidity of the heart's action, with weakness, vertigo and partial disablement as regards work. Four of the five patients had either just undergone treatment for corpulence or lost much flesh, a fact which strikes the author as very significant. He propounds the theory that the undue motility is dependent on the loss of fatty tissue from about the organ.

(This explanation seems very fanciful, and one is more inclined to believe that the cardiac symptoms which were present, were due to debility resulting from rapid or excessive loss of weight, than to the shifting position of the heart. But it is well to know that the heart can move within such wide limits.—REP.)

TREATMENT OF CONSUMPTION BY RESIDENCE AT HIGH ALTITUDES.

Dr. C. Theodore Williams [5] offers a contribution from his own practice, of one hundred and forty-one cases of phthisis treated in sanitaria in altitudes from 5,000 to 9,000 feet, in the Alps, the Rocky Mountains and the South African Highlands, during the last nine years, in order to deduce certain practical rules therefrom. The one hundred and forty-one cases have been tabulated for statistical purposes under the following headings: Sex; age; length of illness before the commencement of mountain residence; hæmopytsis; history and nature of cases; state of the lungs; medicine and diet; length of residence at high altitudes. The Alpine climate is then compared with that of Colorado and the South African Highlands. The results of this treatment have been tabulated under the heads of *General;* referring to the general health, vigor, and weight: and *Local;*

[3] Lancet, 1888, I. p. 1067. Vide Report on Progress, Journal, I. p. 246.

[4] Beilage zum Centralblatt für Klin. Med, 1888. No. 25.

[5] Lancet, 1888, I. p. 924.

including the conclusions arrived at from the examination of the lungs. The general results are divided into (1) cured, 41.13 per cent., where the restoration to health was complete; (2) greatly improved, 29.78 per cent.; (3) improved, 11.34 per cent.; deteriorated, 17.02 per cent.: thus giving a total of 82.25 per cent. improved, and 11.34 per cent. deteriorated, including 13.47 per cent. of deaths. The local results of the one hundred and forty-one cases yield improvement, greater or less, in 74.82 per cent., (including arrest in nearly forty-four per cent.), deterioration in nearly 12½ per cent., and a stationary condition in 3.59 per cent. Among the first stage cases there was improvement in 91 per cent., and arrest of disease in 63 per cent., with deterioration in nearly 7½ per cent. Cases of unilateral first stage give 92 per cent. improved, and 70½ per cent. of arrests, and cases of bilateral affection yield 87.09 per cent. of improved, and 48.58 of arrests, and in the second and third stage cases there was improvement to a greater or less extent in 46 per cent., arrest in 10 per cent., and deterioration in 46 per cent. Single cavity cases gave better results than cavity cases with the opposite lung involved, and left lung cavities showed a less tendency to change, either for better or worse, than the right lung ones. The following conclusions are arrived at:

(1) That prolonged residence at high altitudes produces great improvement in the majority of consumptive patients, and complete arrest of the disease in a considerable proportion, such arrests being in a more or less degree permanent. (2) That in order to secure these advantages, patients must be free from pyrexia and all acute symptoms, and must possess sufficient lung surface adequately to carry on the process of respiration in the rarified atmosphere. (3) That the influence of the climate seems to promote a change in the lungs, either of a curative or destructive character, and to oppose quiesence. (4) That residence at high altitudes causes enlargement of the thorax, hypertrophy of the healthy lung tissue, and the development of emphysema around the tubercular lesions, and that this expansion of the chest is accompanied by diminution of the pulse and respiration rate. (5) That it is probable that the arrest of consumptive disease is partly owing to the pressure exercised on the tubercular masses by the increasing bulk of the surrounding tissue. (6) That the above local changes are accompanied by general improvement, shown in the cessation of all symptoms, and the gain of weight, color, and of muscular, respiratory, and circulatory power. (7) That consumptives of both sexes benefit equally by mountain residence, but that the age of the patient exercises considerable influence on the result. (8) That the high-altitude treatment seems to be specially adapted in cases where heredity and family predisposition are present. (9) That the climate is useful in cases of hæmorrhagic phthisis, and that hæmoptysis is of rare occurrence at the mountain stations. (10) That mountain climates are most effective in arresting phthisis when the disease is of recent date, but that they are also beneficial in cases of longer standing. (11) That the special effect of high-altitude residence on the healthy and sick are common to all mountain ranges of elevations of 5,000 feet and upwards. (12) That to ensure the full advantages of high-altitude residence, a period of at least six months is necessary in the majority of consumptives. In cases of long standing and extensive lesions, one or two years are often requisite to produce arrest of the disease. (13) That in addition to the above examples, mountain climates are beneficial in (1) cases of imperfect thoracic and pulmonary development; (2) chronic pneumonia without bronchiectasis; (3) chronic pleurisy where the lung does not expand after removal of the fluid; (4) spasmodic asthma, without much emphysema; and (5) anæmia. (14) That they are contra-indicated in the following conditions: (1) phthisis with double cavities, with or without pyrexia; (2) cases of phthisis where the pulmonary area at low levels hardly suffices for respiratory purposes; (3) catarrhal phthisis; (4) erethitic phthisis, or phthisis where there is great irritability of the nervous system; (5) emphysema; (6) chronic bronchitis and bronchiectasis; (7) diseases of the heart and greater vessels; (8) affections of the brain and spinal cord, and conditions of hypersensibility of the nervous system; and (9) where the patients are of advanced age, and where they are too feeble to take exercise.

Dr. Hermann Weber gave a few of the results of his own statistics of 106 cases treated at high altitudes. Of these 38 were cured, 28 improved, 16 stationary, and 10 deteriorated. Of 70 in the first stage, 36 were cured, 28 improved, 11 stationary, and 6 grew worse. Of 32 in the second stage, 2 were cured, 13 improved, 11 stationary, and 6 deteriorated. Of 4 in the third stage, 1 was improved, 1 remained stationary, and 2 deteriorated. Whilst granting that high altitudes did thus effect great good, Dr. Weber pointed out that equally good results might be obtained at lower levels if systematic medical and dietetic treatment were carried out at Falkenstein, near Frankfort. From this place, which is only about two thousand feet above the sea level, Dettweiler's statistics (which are perfectly reliable) prove this contention. In Dr. Weber's cases the gain in weight was observed in 58 cases; weight remained stationary in 40, and 8 lost flesh. It was remarked, however, that patients could be well nourished before being sent to high altitudes, so that a gain in weight might thus be anticipated by previous treatment.

Drs. Pollock and Quain criticised Dr. Williams's paper, and maintained that equally good results could be, and, in fact, were obtained by medical and hygienic treatment in London. It is precisely those cases that are benefitted at high altitudes that do well at home.

Drs. Tucker, Wise, Ewart, and Huggard spoke in favor of high altitudes.

Drs. De Haviland, Hall, and Williams agreed that cases of laryngeal phthisis do badly in the mountains, and the latter argued that at home, or on sea-voyages, or in warm places, good results could be obtained, yet that high altitudes yield far better results. This was shown in the actual arrest of the disease, which did not happen, or very rarely, when cases were treated elsewhere. By arrest he meant total disappearance of all physical signs of lung mischief, as well as restoration of the constitutional state.

PNEUMO-HYDRO-THORAX TREATED BY INJECTION OF STERILIZED AIR INTO THE CHEST.

Potain[6] reports three cases of pleural effusion consecutive to pneumothorax of tubercular origin successfully treated by injection of sterilized air into the pleural cavity by the following method: A needle

[6] Bull. de l'Acad. de Med., 1888, No. 17.

similar to that of a hypodermic syringe, attached by a fine rubber tube to a reservoir of air which has been sterilized by being passed through a strong carbolic solution and then through cotton, is introduced into the sixth intercostal space while the trocar of an aspirator is plunged into the seventh. The air is then allowed to flow in as rapidly as the fluid escapes, its flow being regulated by means of a clip on the tubing so as to maintain about a normal intrapleural pressure of 6 to 7 millimeters of mercury, as shown by the small metallic manometer attached to the aspirating apparatus. At each operation all the fluid was withdrawn, and it was repeated as often as the chest refilled, in one case four, in another five times. It was attended by no discomfort apart from the introduction of the needles, and was followed by great relief from all urgent symptoms. The final results were eminently successful; in all three cases the pneumothorax was cured without retraction of the chest, and in two the phthisical process was arrested. In the third case both lungs were affected, and the disease, which seemed checked for a time, went on to a fatal termination. The method is only applicable when the effusion is serous or sero-purulent, and not fetid, and should be deferred till the fluid has become either inconvenient from its weight or dangerous from its volume. It is contraindicated when there is a large communication with a bronchus, or the effusion is fetid. The advantages of the operation are that the dangers from a large quantity of fluid in the pleural cavity are avoided, as well as those arising from rapid evacuation of a large effusion; that the serious inconveniences of frequently repeated punctures are avoided, escaped, and the lung is allowed the possibility of slow and progressive expansion. Finally, cicatrization and cure of tubercular lesions seem to be favored by keeping the affected lung for a long time at rest.

EMPYEMA AFTER FIBRINOUS PNEUMONIA.

Penzoldt[7] is led to believe that this accident is commoner than is usually supposed, as he has recently seen seven cases. The course of the pneumonia in all the cases was severe, and the temperature failed to return to normal at the time the local symptoms indicated the crisis. This sign, however, often fails, and no other symptom indicates the presence of pus. He, therefore, urges the importance of exploratory puncture in all cases where dulness and bronchial respiration persist, with fever and diminution of strength. He has, by neglect of this in the past few years, failed to discover the existence of empyema after pneumonia, or has found it too late in a few cases. It seems probable to him that in these cases the active infectious germs producing pneumonia and those causing pus are associated, the latter finding their way into the pulmonary pleura.

Hood,[8] in order to emphasize the difficulty of distinguishing between pleuritic effusion and solidified lung by physical signs, reports four cases of empyema following pneumonia, together with a fifth case, cause not stated, where the differential diagnosis was made by puncture. In two of the cases, granting the presence of fluid, there was no evidence of its purulent character. Hectic, sweats, and fluctuating temperature were wanting. In one case the temperature was 99°, in another normal at the time of aspiration.

[7] Münch. Med. Wochenschrift, 1888, p. 227. Am. Journal of the Med. Sciences, 1888, I, p. 621.
[8] British Medical Journal, 1888, I, p. 1051.

Hospital Practice and Clinical Memoranda.

BOSTON CITY HOSPITAL.

DISLOCATION OF HIP OF ELEVEN MONTHS' STANDING; REDUCTION BY MANIPULATION.

SERVICE OF DR. W. H. THORNDIKE.

REPORTED BY D. E. BAKER, M.D., *Former House Surgeon.*

The following case has been deemed worthy of publication on account of the circumstances attending the accident, the different views entertained as to its nature and the length of time that elapsed before relief was obtained.

Mrs. M., a widow, nineteen years of age, entered the hospital September 14, 1883. In October of the previous year she had been confined, and eight days afterward left his bed and moved about the room. Three weeks after labor she began to have pain in the left knee, which later shifted to other parts of the body. In the course of another fortnight the pain had settled in the left thigh and increased in intensity. No constitutional symptoms had thus far appeared.

While lying on the sofa on the 25th of October, 1882, she felt severe pain in left hip and down the back of the thigh, which was far more acute than had been previously experienced. On attempting to get up and walk the left leg gave way under her, and she fell to the floor, but was unable to tell how she struck. She was lifted into a chair, and from the chair carried to the bed, where she first noticed a tendency in the left knee to fall in and overlap its fellow. There was great pain behind and above the hip joint of that side when she attempted to rest on the left natis. The only relief obtained was by keeping the leg flexed and supported on a box under the knee, and the subcutaneous use of morphia every four hours. Chills, high temperatures and profuse perspirations ensued. For eleven weeks she was kept under the influence of morphia much of the time. This was abandoned on account of its unpleasant effects. At the end of thirteen weeks she began to sit up, and a month later to go on crutches, with the limb flexed and the toe far from touching the floor. When she was beginning to get about there was an examination made under ether, and the opinion was expressed that the hip was out of joint, but no decided efforts were made to restore the bone to its place. For three weeks imperfect methods of extension were employed, such as suspending a weight from the foot over the end of the mattress when she was in bed, and allowing a weight to dangle from the left foot while she supported herself between two chairs in the erect position. One of her medical attendants had treated her for sciatica, and another for possible hip disease. The foot gradually came down so that at length the great toe rested on the ground, and the limb was used in walking. Two months before entering the hospital she dispensed with one crutch. The appetite had been poor, and the strength was easily exhausted, until the last three weeks before admission, when she made some gain in these respects, and could walk three-fourths of a mile with but one crutch. The patient stated that she realized the severity of the operation to reduce the dislocation, but could not feel satisfied until the attempt had been made.

In the examination that followed her entrance into the hospital, it was found that in the erect posture the toes and ball of the left foot touched the floor. When lying on her back the left knee overlapped the right, and the left foot was inverted, the great toe overriding the opposite instep. The thigh could be slightly flexed without moving the pelvis, but flexion beyond a certain point tilted the pelvis and caused pain. The distance from the anterior superior iliac spine to the patella was one inch shorter on the left than on the right side. A straight line from left anterior superior iliac spine to left internal malleolus passed outside the patella. The left internal malleolus was apparently two and one-half inches above the right. The tip of great trochanter on this side was one inch above Nelaton's line, and the same point was an inch farther from the anterior superior spina ilii on the left than on the right side. The head of the femur could be plainly felt on the dorsum ilii far back of the acetabulum. Under ether, with the leg fully extended, the line from the left anterior superior spine of the ilium to left internal malleolus passed over the patella, and was one inch shorter than the corresponding distance on the right. The muscles were smaller on the left side than on the right. Grating was felt during the flexion of the thigh under ether.

In consultation, the surgical staff confirmed the diagnosis and advised the attempt at reduction. Accordingly, on September 21st, one week after admission, the patient was etherized for this purpose. While the pelvis was steadied by the hands of the assistants, Dr. W. H. Thorndike performed the manipulation. The thigh was flexed, adducted, circumducted outward, and rotated, and the manœuvre repeated twice, when a marked thug was perceived, after which the leg was lowered to the table. On raising the leg the head of the bone appeared to be somewhat below the joint, whereupon the operator placed his arm under the knee, with the thigh slightly abducted, and forcibly jerked the latter upward, when a second thug was detected, and the normal movements of the limb could then be performed without any resistance.

A mass of indurated tissue was found behind and above the acetabulum, where the head had rested, but the marked prominence of the latter had disappeared. With the limbs extended, the patellæ were opposite, but semiflexion of the thighs made the left femur appear about one inch shorter than its companion. This might be accounted for by the smaller glutei of the left side, an original difference in length of the femora, or by absorption of the left cervix femoris. In flexing the thigh on the pelvis, the head grated somewhat in its new, but old position. Measuring from the ilium to the patella, one-fourth inch shortening was obtained, but between the ilium and malleolus no disparity was demonstrated.

The knees of the patient were bound together and morphia given subcutaneously during a paroxysm of pain, which occurred during the first night after the operation. She slept between two and three hours. In twenty-four there was marked ecchymosis, swelling, and tenderness of the thigh and intermittent pain. For the next few days laudanum fomentations were applied about the hip and thigh, and the ankles and knees were bound together.

The temperature fluctuated between 99° F. to 102° F. for three days, and the pulse from 100 to 120, then gradually both declined. Patient slept fairly well, but suffered from paroxysmal pain, and evinced considerable nervousness, with twitching of eyelids and mouth. A week after the reduction the legs could be flexed to an angle of 45° without much pain to the patient. The ankles and knees were then unbound and a lateral decubitus allowed. In a fortnight there was but little tenderness, swelling and discoloration had disappeared, and the thickening behind the acetabulum was not so apparent. Rotation of the thighs gave a sense of difference in the length of the two femoral necks. The patient sat up October 5th, and brought a part of her weight on the left foot, the heel resting on the floor. For another fortnight more or less pain occurred, which was relieved by fomentations and a blister, two inches square, in front of the joint. Walking about on crutches, she gathered strength daily, and the gait was even, but slightly limping. She took four minims of Fowler's solution and three grains of quinia thrice daily. At the expiration of a month she could walk without crutches by taking the hand of her nurse, but this gave her considerable pain. She left the Hospital November 9th, able to hobble about without crutches, or to walk evenly with them, and in good general health. The subsequent improvement was rapid and recovery complete.

Three years after the operation she writes that her health was never better, and that the hip is all right. The limb is a trifle short, but there is no limping to speak of, and the only pain is a slight rheumatism if she gets cold.

Reports of Societies.

ESSEX NORTH DISTRICT MEDICAL SOCIETY.

THE Annual Meeting was held at Haverhill, May 2d, the president, DR. E. P. HURD, in the chair.

The following officers were elected for the ensuing year:

President, Dr. C. G. Carleton, Lawrence. *Vice President*, Dr. G. W. Snow, Newburyport. *Secretary and Treasurer*, Dr. Maurice D. Clarke, Haverhill. *Corresponding Secretary*, Dr. Aug. Stabler, Lawrence. *Censors*, Drs. J. F. Young, Newburyport; R. C. Huse, Georgetown; F. W. Kennedy, Lawrence; J. F. Croston, Haverhill; H. F. Adams, Newburyport. *Councillors*, Drs. John Crowell, Haverhill; George Montgomery, Newburyport; F. A. Howe, Newburyport; L. J. Young, Haverhill; C. N. Chamberlain, Lawrence; R. B. Root, Georgetown; J. A. Douglass, Amesbury; O. Warren, West Newbury; C. P. Morrill, North Andover. *Commissioner of Trials*, Dr. F. A. Howe, Newburyport. *Nominating Councillor*, Dr. John Crowell, Haverhill.

DR. SUSAN E. CROCKER, of Lawrence, read a paper on

FOOD POISONING.

After introductory remarks on the methods of development of poisonous alkaloids from food in daily use, the following case was cited to show how a most potent poison was developed under quite ordinary circumstances:

On the 25th of last July I was called to see a family consisting of father, mother and one child. On my arrival I found that Mr. H., who had just reached home, was sitting on the sofa, wrapped in blankets and shivering with cold, a striking picture of collapse.

His face was pale, cyanotic, eyes and cheeks sunken, pulse scarcely perceptible. The wife was throwing herself about in paroxysms of pain and agony. Retching, vomiting and profuse diarrhœa were marked symptoms. The daughter, five years old, presented the same symptoms in a less aggravated form. I found that all were attacked about two hours after the noon meal, of which all had partaken together. Mr. H. was taken with severe gastric and abdominal pains soon after leaving Lawrence for Boston, quickly followed by vomiting, purging and great prostration. He was so weak before reaching the city that he had to be assisted from the car to the waiting room, where he remained in great agony until the next train for Lawrence.

Mrs. H. and the child developed similar symptoms about the same time, but in a less alarming degree, domestic remedies giving temporary alleviation, only to be followed by a renewal of the symptoms of poisoning.

Mrs. H. and the little girl were soon made comfortable, but Mr. H.'s symptoms continued to be alarming for several days. Chills, vomiting, and copious intestinal discharges continued until the next morning, when they became less frequent. These discharges were thin, and contained blood, mucous and membranous shreds. During the day Mr. H. rallied somewhat, and was able to take a small quantity of champagne. The pulse, which had been feeble and intermittent, grew stronger, and from that time improvement took place.

The treatment presented nothing of note, being directed mainly to a treatment of symptoms, and, in the case of Mr. H., to a prevention of fatal collapse, which seemed imminent.

In all these cases blood was seen in the discharges, being least in that of the child, and very large quantity in Mr. H.'s case. The pain and vomiting were greater in Mrs. H.'s case than in that of her husband, but the prostration was not so marked, and the rallies much sooner.

As soon as possible after making the family comfortable, I proceeded to investigate the cause of trouble. I inquired particularly about every article eaten at dinner. This meal consisted of bread, potatoes, salt fish and cream pie. All had partaken of these articles. In addition the little girl had eaten a few berries. I was able, very soon, to eliminate the bread, potatoes and salt fish. For obvious reasons these could not have been the source of the trouble. Neither could the berries have been at fault, as only one had eaten of them. The cream pie alone remained, and of this all had eaten. Inquiring more particularly about this pie, I found that it was cooked the day before, and formed a part of the dinner of that day, and all had eaten more abundantly of it than the second day, as less than a fourth remained over from the first dinner. This showed conclusively that if there was poison in the cream pie it had been developed in the twenty-four hours between the two dinners. None of the pie remained for examination.

I found, moreover, that the father had eaten the largest portion, the mother the next larger, while the child had barely tasted of it, hence the lightness of the attack in her case.

Cream pie is a compound of eggs, milk, corn-starch and sugar. To these ingredients is usually added some flavoring. Vanilla is the favorite extract used, and this was the flavoring used on this occasion. In some similar cases of poisoning vanilla has been charged with being the toxic agent, but in this case the vanilla had been in the house for some time, and had been proved perfectly harmless.

The next question was where and how was the pie kept? The family had been out of town, and were intending soon to go out of town again, and had not thought it necessary to take ice for the short time that they remained at home. They had, therefore, placed several perishable articles in the cellarway to keep cool, the cream pie with the rest. In this cellarway I found the three conditions most favorable to cryptogamic growth, warmth, moisture and darkness. The air in the cellar, it is true, was cooler than the external air, but as there had been a long period of continued high temperature the cellar air was of a much higher temperature than usual.

It is evident that some chemical change took place in the pie, whereby an irritant poison was developed, and in view of the part which microbes are known to play in inducing such chemical action, we may conclude that the germs living in the close air of the cellar were the primary cause of this action. The stagnant air of the cellar, the heat developed by many days of continuous high temperature, the moisture at just the right point to favor the development of germs, formed, indeed, a most favorable state of things for producing the result described.

The case of cream pie poisoning cited is not unique. At least one other case occurred in Lawrence last summer, in which a husband and wife were the victims, and in which cream pie, kept over from the previous day's dinner, was the toxic agent. In the latter case the pie was shut up in a closet, without ice, under somewhat similar conditions.

After speaking of some varieties of microbes, and their agency in producing ptomaines, the speaker referred to the many cases of ice cream poisoning published in the periodicals of the day, showing that the cause was undoubtedly the same as in that of the cream pie cases mentioned. The studies and experiments of Professor Vaughn, and his discovery of tyrotoxicon throw much light on the *modus operandi* of the cases cited, and some of his experiments were detailed at some length. His latest report was especially interesting, describing as it does the history of four cases of poisoning in one family, three of which proved fatal. The poison was, by careful tests, traced to some milk kept in a pantry under conditions favorable to germ growth, and the ptomaine was found to be tyrotoxicon.

In view of the many cases of poisoning occurring every summer, the many cases of cholera morbus, which might, if carefully traced, be found to be caused by some food in which tyrotoxicon or other ptomaine exists; in view of the fact that cholera infantum is probably caused in many cases by the presence of poisonous ptomaines in the milk given to the child, it is urged upon physicians to carefully investigate such cases occurring in their practice, to the end that the conditions under which such ptomaines are produced may be better known.

Dr. Carleton related the case of a family poisoned by cream pie, similar to Dr. Crocker's case.

Dr. A. Howe, of Newburyport, had seen a family with similar symptoms that had eaten of stale cream pie.

DR. J. J. HEALY, of Newburyport, had seen a family with like symptoms, and had traced the poisoning to oatmeal porridge that had been kept over twenty-four hours.

DR. C. E. DURANT, of Haverhill, read a paper on

ABORTION.

He advocated active interference to evacuate the uterus of any portion of the placenta or membranes be retained.

Remarks were made upon the paper by Drs. Flanders, R. C. Huse and Stabler.

DR. STABLER advocated the use of opium in full doses in threatened abortion wherever there is reason to hope that a child may be saved. It quiets the contractions of the uterus, and for this purpose he thinks opium a better drug than morphia.

DR. HUSE agreed with Dr. Stabler with regard to the value of opium. He has seen cases where morphia produced more vomiting than opium, and thinks it may be due to the presence of apomorphia as an impurity.

DR. JOHN CROWELL, as chairman of a committee to draw up a memorial of Dr. Nichols, read the following:

IN MEMORIAM JAMES R. NICHOLS, M.D.

James Robinson Nichols, a member of this Society since 1857, was born in West Amesbury (now Merrimac) July 18, 1819. In early life he came to Haverhill as a clerk in a drug store, and, being of an inquisitive turn of mind, he became interested in mechanical invention, and his spare hours were spent in the construction of many ingenious appliances. He commenced the study of medicine under the preceptorship of Dr. Kendall Flint, and, with scanty pecuniary means but with a persistent purpose, he attended a course of medical lectures at Dartmouth College in 1842, but, changing his purpose in the choice of a profession, he did not graduate, although he subsequently received the degree of M.D., and, later, that of A.M., from that institute.

In 1843 he established a drug store in Haverhill, where he did a thriving business, devoting his leisure hours to the study of theoretical and practical chemistry, and to numerous mechanical inventions, many of which are still widely in use. In 1856 he had the advantage of an extended European tour, and in 1857 he established in Boston the house of J. R. Nichols & Co. for the manufacture of chemical and medicinal preparations. This establishment has had a large pecuniary success and an honorable reputation.

Dr. Nichols was a voluminous writer upon subjects related to his favorite work; and through the medium of the *Journal of Chemistry* (now the *Popular Science News*) established by him, his articles upon popular Scientific topics and psycological speculation and investigation have attained a wide circulation. Several of his literary works have found more substantial form in the volumes published by him upon the processes of cultivation of the soil and the operation of the forces of nature in the common ways of life. The book entitled "Whence, What, Where?" written in 1882, is the best known of his literary publications. This work, written in an attractive style, furnished perhaps the best illustration of the modes of thought of the writer in the realm of material and psychical investigation, speculation and reverie.

In social life Dr. Nichols had the elements of delightful companionship. His fertile mind, his wide observation and extensive reading made him a rare conversationalist, and no one could long be in his company without receiving valuable information and suggestion. His abundant wealth enabled him to dispense a generous hospitality, and the members of this Society have often enjoyed a social hour amid the delightful haunts of Kenoza and Winnikeni.

Although not a practicing physician, Dr. Nichols was deeply interested in our profession, and during the early years of his membership he gave many valuable lectures to this Society upon experimental chemistry and other subjects connected with medical science.

For many years he was an invalid, suffering much from indigestion and consequent nervous depression and insomnia; and finally, on January 2, 1888, his physical forces succumbed to the power of disease, and he passed peacefully into rest.

. . . . "And when the stream
Which overflowed the soul was passed away,
A consciousness remained, which it had left
Deposited upon the silent shore
Of memory, images and precious thoughts,
That shall not die and cannot be destroyed."

JOHN CROWELL,
OLIVER S. LOVEJOY,
MAURICE D. CLARKE, } *Committee.*

The Censors reported Dr. Kate Campbell Hurd, of Newburyport, admitted a fellow of the Society.

Recent Literature.

On the Operative Surgery of Malignant Disease. By HENRY T. BUTLIN, F.R.C.S., Assistant Surgeon and Demonstrator of Surgery, St. Bartholomew's Hospital; Late Erasmus Wilson Professor of Pathology to the Royal College of Surgeons. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut Street. 1887.

Mr. Butlin has in this work really conferred a favor on the practical surgeon of to-day in that he has concisely formulated the knowledge on this subject in an admirable manner. He has written the work hoping to attain one or all of the following ends: "Indicate the class of cases and the parts of the body which may be treated by operative means with the best prospects of success. Encourage the performance of operations in suitable cases at the earliest possible period. Discourage the repetition of useless and dangerous operations. Raise the question of the propriety of the removal of entire organs for the cure of cancer of limited extent." All of the foregoing headings are carefully considered. The book is an admirable one for reference, for its composition is largely statistical. The work is written in an attractive style, the author presenting the information in a judicial manner, carefully weighing the evidence for and against a given operation, and giving the reader the result of his conclusions in a particularly unbiassed manner. Particular attention is called to the practice, so much in vogue, of removing the whole of an organ, as for instance the breast, regardless of the extent of the malignant disease; this procedure is condemned by the author who advises a very free removal of only the diseased structures. It is an excellent work and fills the intended niche.

— The name of the *Canada Medical and Surgical Journal* has been changed to the *Montreal Medical Journal*. It has been enlarged in size from sixty-four to eighty pages, at the same time reducing the subscription to two dollars per annum, and making other improvements that, it is hoped, will place it in the front rank of medical publications.

THE BOSTON

Medical and Surgical Journal.

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94 BOYLSTON STREET, BOSTON, MASS.

DENSITY OF POPULATION AS A SOCIAL AND SANITARY QUESTION.

THE laborious work of the statistician often lies buried for years, until some intelligent thinker brings it to light and makes a practical application of the data thus collected. John Bright once said in a public assembly, "I find it stated that in Glasgow alone 41 families out of every 100 live in houses (tenements) having only one room." He was immediately interrupted by his audience with shouts of incredulous laughter, whereupon he replied, "That is the official statement of the census." This was said with reference to the census of 1871, and was a good illustration of the proverb that one-half of the world does not know how the other half lives.

In the United States, with the exception of a few large cities, we know but little of the conditions which prevail in European cities with reference to the amount of space occupied by the population.

In the 45th Registration Report of Massachusetts, (1886) a table was presented in which was given the density of the population of the State as a whole, and that of the manufacturing counties, as compared with that of the agricultural or rural counties. With the exception of Rhode Island, Massachusetts is the most densely populated State in the Union, and has by its last census a population of 233 to the square mile. In the six manufacturing or urban counties containing nineteen of the twenty-three cities of the State, the density amounted to 442 persons to the square mile, while in the eight agricultural counties the average density was scarcely 100 per square mile. The death-rate of the former was 19.7 per 1000, of the living population, and of the latter it was but 17.7 per 1000.

This slight difference in percentage appears at first sight insignificant, but when applied to the two million inhabitants of the State, a difference of two deaths only per 1000 means an excess of almost 4000 deaths, for the higher death-rate.

If different periods are contrasted, as for example, the five years ending with 1854, with the five years ending with 1886, in which time the population had nearly doubled, and the density increased from 120 to 233 to the square mile, the death-rate had also increased from 18.4 in the former to 19.5 per 1000 in the latter period, a difference of 1.1 per 1000. These differences are chiefly manifested in the cities, since it is only in comparatively crowded populations that this principle finds application.

Another illustration of the same principle having a sanitary bearing is found in the adulteration of certain common articles of food. The reports of the State Board of Health showed that in the four western counties of Massachusetts, having a population with an average density of 95 per square mile (census of 1885) milk adulteration is practically unknown, while in the four counties of Suffolk, Middlesex, Essex and Norfolk with a density of 582 per square mile, the greatest vigilance is constantly required for its prevention.

In two recent essays entitled "The House in its relation to Public Health" [1] and Life in One Room," [2] Dr. J. B. Russell has given some instructive statements as to the crowded condition of tenement-house life in Glasgow, from which he deduces certain propositions which are of special value to sanitarians, in consequence of the clearness and forcible manner in which they are stated.

By the census of 1881 Glasgow had a population of 511,520; of this number nearly 25 per cent. or 126,000 lived in tenements of one room and 228,000 or 45 per cent. in two-roomed houses. In commenting upon this fact, Dr. Russell says to his audience, "Percentages though accurate, are but a feeble mode of expression of facts regarding men and women like ourselves. I might throw down that statement before you, and ask you to imagine yourselves with all your appetites and passions, your bodily necessities and functions, your feelings of modesty, your sense of propriety, your births, your sicknesses, your deaths, your children, in short your *lives* in the whole round of their relationship with the seen and the unseen, suddenly shrivelled and shrunk into such conditions of space. Where can I find language in which to clothe the facts of these poor people's lives and yet be tolerable?"

"It is these small houses which produce the high death-rate of Glasgow. It is these small houses which give to that death-rate the striking characteristics of an enormous proportion of deaths in childhood, and of deaths from diseases of the lungs at all ages. Their exhausted air and poor and perverse feeding fill our streets with bandy-legged children. There you will find year after year a death-rate of 38 per 1,000, while in the districts with larger houses it is only 16 or 17. Of all the children who die in Glasgow before they complete their fifth year thirty-two per cent. die in houses of one apartment, and not two per cent. in houses of five apartments and upward. There they die, and their little bodies are laid on a table or on the

[1] Glasgow, 1887. From transactions of the Insurance and Actuarial Society.
[2] Glasgow, 1888. Lecture before Park Parish Institute.

dresser, so as to be somewhat out of the way of their brothers and sisters, who play and sleep and eat in their ghastly company. From beginning to rapid ending the lives of these children are short parts in a continuous tragedy. A large proportion enter life by the wide door of illegitimacy. One in every five of all who are born there never see the end of their first year. Of those who so prematurely die, a third have never been seen in their sickness by any doctor."

It is this factor of space, "in which we live and move and have our being," and the proportion of the numbers in which we live in it, that determine the proportion in which we share the prime physical conditions of health: air, sunlight, earth-space sufficient to give free play to those operations of nature which will keep our environment healthy, if they are not overtaxed by the aggregation of men.

From the data furnished by the vital statistics of England, Dr. Farr constructed a physical basis, and proved that the apparently confused local phenomena of mortality were subjected to certain laws capable of exact numerical expression, and of reduction to mathematical formulæ. A theoretical standard of health was established, toward which the practice of sanitary science could work on precise lines.

The terminology of the new science was expressed in the terms *density*, *areality* and *proximity*. *Density* refers to the number of persons per unit of area on which they live. *Areality* is the unit of area per person living on that area, and is, therefore, the reciprocal of the density. *Proximity* is a function of the areality, and it varies as the square root of the areality. And all these are based on the hypothesis of an equal distribution of the population.

In seven districts in England in 1871 the mortality-rates were respectively 17, 19, 22, 25, 28, 32 and 39 per 1,000. In the same districts the number of persons to a square mile were also 166, 186, 379, 1,718, 4,499, 12,357 and 65,823.

This series of facts may be stated differently. The nearer people live to each other the shorter their lives are. In districts where the proximity averaged 147 yards the mean duration of life was fifty-one years. In districts where the proximity was 97 yards the mean duration of life was forty years; where it was 28 yards the mean duration was thirty-two years; and in Liverpool, having the greatest density and the least proximity, namely 7 yards, the mean duration of life was but twenty-six years.

This law, however, must be applied with a clear understanding of the conditions in which the population lives. The basement of the law is this, that animal life contaminates its environments. In the process of living man defiles air, earth and water. This defilement only becomes dangerous when his environment cannot cleanse itself.

The disadvantage of close proximity finds a typical illustration in infectious diseases. Infection, which means the passage of a material something from person to person, takes place in proportion to the average proximity of the population. If, in one city, the average proximity is eight yards, and in another ten yards, then the chances favorable to infection in the former must be greater than those in the latter, unless by greater care in the treatment of cases of infectious disease such chances are diminished.

It follows (1) that proximity does not begin to tell against health and life until it has passed a certain point; (2) that the same degree of proximity under different circumstances will have different degrees of injurious influence.

From his observations, Dr. Russell deduces the following conclusions:

(1) *The unit room in large houses has a higher cubic value than the unit room in small houses.*

(2) *The smaller the house, as measured by rooms, the greater the number of inmates per room, and, vice versâ, the larger the house as measured by rooms, the fewer the number of inmates per room.*

(3) *The smaller the house, the less the cubic space per inmate, and, vice versâ, the larger the house, the greater the cubic space per inmate.*

(4) *Space is a commodity which is used only as a necessity of life by the wage-earning classes, but is used as a luxury by the wealthy.*

Some of the conditions requisite to secure the wholesome occupation of tenements are the following: They must be carefully planned and built. They must start with the best practicable structural arrangements and sanitary provisions. Their contained air must be put in the best attainable circumstances, both as to renewal, and as to reducing contamination to a minimum by efficient drainage, water-supply, and the removal of refuse. When originally well ordered, the tenement-house must, when occupied, be carefully maintained. It works like an engine driven to the full extent of its horse-power. It is always bursting with life, from roof-tree to foundation. Every part of its movable working apparatus, and even its solid structure, is under strain.

Supposing the structure and maintenance to be perfect, the mode of occupation must be regulated. The condition of wholesomeness lies essentially in the due proportioning of inmates to cubic space. The houses are in the market, but health is at stake in the choice made by the buyers. Every tenant, in making his selection, has on the one side of a line drawn by the laws of the universe, health, and on the other, disease. Experience proves that the occupants of small houses cannot be left to their freedom of action in this matter. There is a moral responsibility on the landlord in the first place, and, failing him, upon the authorities somehow to direct and determine their choice. Supposing this difficulty overcome, the tenement thus properly built, maintained, and occupied, cannot then be left without supervision as to its occupancy. Physical and moral chaos will gradually invade the original order, if an eye, either that of the landlord or of the sanitary inspector, is not kept upon the householders to prevent overcrowding.

The practical application of these pungent words from Dr. Russell to our urban population is plain. The laws relating to tenement-houses are yearly being made more and more stringent and definite in their provisions as to the important questions of ventilation, air-space, drainage, and fire-protection. It remains for local authorities to provide efficient means for the enforcement of the statutes for the protection of the lives and health of the inhabiting population.

YELLOW FEVER IN FLORIDA.

PREVIOUS to the present year, the last general epidemic of yellow fever in the South to reach serious proportions was in 1878 and 1879. New Orleans, the key to the whole Mississippi Valley, was in former years exposed to a standing menace through her trade, especially in coffee, with Rio de Janeiro and other South American ports. Quarantine against the invader served to harass her commerce, but not to exclude the disease. Of late, maritime sanitation has been substituted for quarantine as the effective agency for warding off the fever, and with the most satisfactory results. Memphis, whose growth and material prospects were so nearly ruined by the epidemic of 1878, losing by death, as she did in that year, nearly one-third of her whole population, took to heart the terrible lesson, and despite the demoralization, both sanitary and financial, in which she was left by the scourge, so energetically applied herself to sanitary reform that, when the disease reappeared the next year, it was much less fatal, and there has been no considerable outbreak since.

During the summer of 1887 yellow fever prevailed quite extensively in the Gulf ports of Florida, having been brought into Tampa May 20th, and soon after appearing at Plant City and Manatee. The epidemic, during all these months, seems to have been treated almost entirely by denying its existence. With the approach of cold weather, the disease dropped out of public attention, and the stream of Northern travel was larger than ever. But the disease was continued throughout the winter by a chain of sporadic cases along the line of the South Florida Railway, and Plant City, Tampa, and even Sanford contained undoubted cases of yellow fever during the height of the influx of Northern visitors into the State. The hotel and transportation interest was strong enough to conceal these cases for awhile, even from the United States Marine Hospital Service, though the bulletins finally published by that Bureau in April last bore date, some of them, at least two months earlier than that time. Since the hot season opened, these dormant foci of disease have broken out into active epidemics, and points which are most frequented by winter tourists have also severely suffered.

The city of Havana, which is probably never free from yellow fever, is in close connection with Key West and Tampa, a line of steamers to those points forming by far the shortest and most direct route from Cuba to the United States. There is no ground for present hope that the sanitary condition of that city is likely to be made right. President Grant's scheme for the acquisition of some of the West India Islands may or may not have been good statesmanship, but there is little doubt that United States control of Cuba would enable sanitary measures to be carried out which would be a great protection to the ports commercially in close relation to it. But, in the absence of such control of the infecting focus, the only safe reliance is upon the policy which has been so effective in Louisiana and Tennessee.

That policy, unfortunately, has been too long delayed. Months of concealment, prompted by greed of gain, have allowed the disease to gain a terrible impetus, and, even after it had fastened upon Jacksonville with a violence that swept away all attempts at further denial, instead of employing cleanliness and disinfectants, means of tested efficiency, time was lost in resorting to such things as cannon-firing, in the hope of killing the fever germs by aërial concussion! Jacksonville looks, so far as concerns its streets, at least to the casual eye of the winter traveller, reasonably clean and well kept. It could not have been nearly the undertaking to put it in good sanitary order that it was in the case of New Orleans and Memphis. Corrosive sublimate, and not gunpowder, was needed. The latter savors of voodooism and the beating of the tom-tom.

Up to the middle of last week, the daily list of new cases in Jacksonville does not exceed twelve or fifteen, but the disease took a fresh start at that time, and the daily average since then has more than doubled. The type thus far has been comparatively mild, there being only thirty-seven deaths out of a total (on the fourth inst.) three hundred and thirty-eight cases. This latter figure probably does not represent the actual prevalence of the disease, as some physicians even now are not reporting their cases, professing to fear the disastrous moral effect upon their patients of seeing the yellow flag displayed. We regret to notice that some of the local physicians have fallen victims to the disease. They, as well as the clergymen of the city, have, for the most part, stood manfully in their places. The board of health will, it is expected, call for further medical aid, and many excellent physicians from outside the State are said to be in readiness to respond. Trained nurses are, however, greatly needed, and seem to be difficult to obtain.

Jacksonville though not necessarily the gate-way into Florida, is practically so, and the occurrence of the fever this autumn will doubtless keep away many of the travellers who are wont to turn southward as the days grow shorter. A great deal of money is invested in hotel property and villas in Florida, and some of this property, we fear, will not yield its usual returns this year. It is the old story that "honesty is the best policy." If the disease had been acknowledged, faced

and fought last year, the coming season might have been as fruitful as any, to railroad and real-estate interests.

Refugees from Florida towns have been mostly quarantined from places on the railroad line north. Murphy, N. C., is the only place which has formally opened its doors to the fugitives. Two hundred cheap barrack-huts have been authorized to be built at Jacksonville for the negroes who are liable to propagate the fever, and who will be removed thither. The refugee camp, located on high pine land on the south bend of the St. Mary's River, on a site selected by Dr. Guiteras, is in one of the healthiest parts of Florida, and it has been abundantly supplied with tents and supplies by government. A number of tents have been set apart, about a quarter of a mile from the rest, for "suspects." Temporary quarantine stations have been established by the Marine Hospital Service near Way Cross, Ga., and Live Oak, Fla., where all northbound travellers are inspected, and unless they can show that they come from a point known to be free from the disease, they are returned at their option either to their original point of embarkation or to "Camp Perry," where they are kept for ten days before being allowed to go to their destination. The residents of Jacksonville express great indignation that they are not allowed to go through to the North, but they are kept to the refugee camp, except such as go to Murphy or other definite points on parole not to go to the seaboard or to any quarantined points within ten days after leaving Jacksonville. Very few cases of disease have passed beyond the State line. One case of yellow fever is reported to have been treated in one of the Philadelphia hospitals. We learn that since 1871 there have been but four deaths from the disease in Boston, all occurring at quarantine, and none during the present epidemic.

MEDICAL NOTES.

— A number of cases have been reported during the last few years of diseases having been communicated in consequence of that part of the rite of circumcision as practised by the Jews which has for its object the arrest of the hæmorrhage. So serious have those untoward accidents been judged that, as we learn from the *Medical Press and Circular*, the matter was recently brought before the Israelite Consistory at Paris. A committee of investigation was appointed, consisting exclusively of medical men, and after an inquiry extending over several months, they have reported in favor of a modification. As hitherto practiced, the religious rite of circumcision comprised three distinct operations, first the *Milah*, then the *Priah*, and lastly the act of suction, *Mezzizah*, for the purpose of preventing hæmorrhage. Notwithstanding energetic protests from the more conservative members of the Consistory, the abolition of the *Mezzizah* was decreed, and Dr. Duplay was requested to draw up, without delay, a new manual of directions for the guidance of heads of families in so far as this part of the rite is concerned. The change of custom is one which would seem to be a great gain, both to the operator and to the child, from the point of view of possible infection, to say nothing of the revolting character of the former custom.

— Dr. F. T. Pasternatski, according to the *Lancet*, in a lecture delivered before the professors of the Military Medico-Chirurgical Academy of St. Petersburg, for the purpose of showing his fitness for the position of *privat docent*, or extra-mural lecturer, in clinical medicine, brought together a number of statistics calculated to show the effect of different methods of treating typhoid fever upon the frequency of relapses. According to his figures, relapses occurred more frequently under cold-water treatment than when indifferent or inactive drugs only were employed. Still more frequently did relapses seem to occur when large doses of quinine — thirty grains per diem — were combined with the cold-water treatment. When large doses of antipyrin, thallin, and acetanilide were substituted for those of quinine, the results, as far as relapses are concerned, were even worse. There is, however, this to be said, that in Dr. Pasternatski's experience, none of the relapses proved fatal, or indeed left any permanent ill effects.

NEW YORK.

— The new wing of the Seaside Hospital of St. John's Guild at Cedar Grove, Staten Island, was recently opened with appropriate ceremonies. It measures 100 by 25 feet, and contains 64 beds; thus increasing the capacity of the Hospital one-half, so that it now accommodates 205 mothers and children.

Miscellany.

MACTE LISTER TRIUMPHATOR![1]

A MOIST-MERRY, HUMID-HILARIOUS ANTISEPTIC VADE-MECUM OF INTERNAL SURGERY, FOR THE AMBITIOUS MODERN PHYSICIAN.

BY DR. RISORIUS SANTORINI. Translated by "FAMULUS."

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CHAPTER IV.

GASTRIC SURGERY.

Of all our organs there is none
So tolerant as the stomach, one
Which patiently accommodates
Much which our frame abominates.
We daily tax the best digestion
By most injurious refection.
But that the suffering stomach e'er
Resection should be called to bear,
And sutures multiple receive,
Surely nobody could believe!

[1] Concluded from page 214.

Loud praises let my song awaken!
Billroth this task has undertaken!
He first this operation planned
And took Hein's triumph from his hand.

. . . . . .

No herb has ever been secured
By which a cancer can be cured!
The therapeutist, helpless, waited —
He sometimes pain alleviated
By sedatives — but, after all,
The prognosis remained "lethal."

But numerous facts this truth reveal,
"What drugs can't cure, is cured by steel."
And this metallic necromancer
Soon gave a better fate to cancer.

It has been proved by Gussenbauer
That animals possess the power
To undergo normal resection
At the pyloric intersection.

Pean the same idea had cherished,
But all his patients quickly perished.
'T was in Vienna — city royal —
That, after years of effort loyal
In way of careful preparation,
A case was cured by operation.

But Kracer's classical review
States that, of cases seventy-two,
Details of which have been secured,
But seventeen are ranked as "cured."

Better results we hope to see
From gastro-enterotomie.
This was by Woelfler first invented,
And to our anxious view presented.
He sought the upper jejunum coil,
And sewed it to the gastric wall.
One thing seems like a serious poenam —
We must remove the duodenum
And the pylorus from their station,
Before we make the new relation.

In twenty-four reported cases,
Ten cures the careful list embraces.

We cannot promise full relief,
For oft there is a recidiv.
But in one case, six years, perhaps,
Have passed away without relapse.

With this in view, I see no reason
For failure, if it 's done in season;
But, first of all, the wise clinician
Must occupy the strong position
The case to diagnosticate,
And its attachments indicate.

But when we have the diagnosis,
And also learn by grave stenosis
The cancer sits at the pylorus,
Resection promptly comes before us;
But with cachexia evident
Naught can the fatal end prevent.

Even when there 's cicatricial stricture
A cure is not beyond conjecture;
But surgery, as all may see,
Now forms our only therapy.

But here we have much more to answer
Than when the malady is cancer;
For when the ulcer 's perforated,
Instant resection 's indicated.

'T is said that oft the inclination
Is to await the perforation
As *casus belli* in the case,
And then to operate apace.
Here, "indicatio vitalis"
Means also "exitus lethalis."

CHAPTER V.

ABDOMINAL SURGERY.

As in the chronicles recorded,
The ages past have oft afforded
Surgeons, alas, much underrated,
Who abdominal section cultivated,
With art and technical address,
And — *nota bene* — with success.

In Knidos, if the truth is stated,
The kidney first was extirpated.
In India we still earlier see
Records of laparatomy.

But in our present century
Our colleagues groped most helplessly.
Therapy reached its minimal
In lesions intra-abdominal,
From poultices in combination
With leeches and with sharp purgation.
You win but little comfort real
In lesions intra-peritoneal;
But ilius (or appendicitis)
Is deemed "lethal" in every treatise.

. . . . . .

Surgical Treatment of Peritonitis.

Active abdominal inflammation,
If it 's acute with suppuration
And cocco-bacterial infection,
You 'll treat, by Kroenlein's wise direction,
Hence as a surgical affection.

In any case the patient 's fated,
By doubt death 's but accelerated,
Excepting when the morbid action
Is checked by proper disinfection
And by intra-abdominal irrigation.

Yes — thus is cured — or environs —
Peritonitis perforans!!

I view with constant admiration
That case of iliac ulceration
Which (typhoid origin) perforated,
And peritonitis instigated,
As through the newly-formed hiatus
Parts of potato and tomatoes
Fell into the peritoneal space,—
And yet recovery took place.
Mikulicz's name is known afar
For surgical presbyopia.
He made abdominal division,
And did an ileum-excision;
With Lembert's sutures closed the bowel.—
Again the patient wields the trowel.

With antiseptic regulation
Cures often follow operation.

Another case — this is not bad:
Herr Kroenlein saw a country lad
With foul and purulent effusion
Who had indulged with great profusion,
In cherries, which, like Tommie Jones,
He swallowed, skin and pulp and stones.
These had produced a perforation;
But after nine long days' duration,
Kroenlein did laparotomy;—
The boy recovered perfectly.

Conclusio: In cases all
When in the abdomen we find gall,
Gangrene or putrid suppuration,
Urine, fæcal extravasation,
We trust to laparotomie; —
To puncture is bad surgery.

In empyæma of the belly
You must resort eventually
To surgery; but only then
You would incise the belly when
The place of bursting you can see.
Then boldly make an opening free.

(b) *Laparotomy in Ileus.*

Of all acute diseased conditions —
None know so well as our clinicians,—
There's none for man or medicus
So painful as is ileus.

With clysters and narcotica
We do not aid the sufferer.
Quicksilver, and the other lumber
Of useless drugs, which sometimes cumber
The doctor's brain, are still employed;
But no relief is thus secured.

Herr Kussmaul therefore advocates
Washing the stomach out, and states
That it succeeds; but I assure you
That this idea will but allure you
To disappointment. Dear colleague,
I would not try this on a pig.

Herr Roser proved statistically,
From death-reports in Germany,
Four thousand persons, more or less,
Die annually of ileus!!

He adds a fact quite pertinent
That a respectable per cent.,
Might be reserved to other fate
If boldly, and when not too late,
The doctor with incision free
Inspect the abdominal cavity.

. . . . . .

This is Internal Surgery:
If you employ it steadily,
'T will spread abroad your gory fame,
And all will tremble at your name!

. . . . . .

Behold our Science! I've outlined it,
If there's a moral you must find it.

FINIS.

IODOFORM IN HÆMOPTYSIS.

THE difficulty of finding any successful method of checking hæmoptysis in tuberculous cases has led to the trial of many remedies. MM. Chauvin and Jorissenne, of Liège, publish a short account of the results of the administration of iodoform, at first along with tannin, afterwards by itself. In the first six cases pills were given containing iodoform, $\frac{3}{4}$ gr., and tannin, $1\frac{1}{2}$ gr. Sometimes the hæmoptysis stopped after two of these had been taken; in one severe case of advanced phthisis, as many as five were given *per diem* for three days before the bleeding ceased. In another patient, who had been in the habit of having eight or ten attacks of hæmoptysis in the year, which had been treated by large amounts of ergotine and morphine, three of the iodoform and tannin pills stopped the hæmoptysis four months ago, and there has been no recurrence since. In the three cases recorded in detail, in which the iodoform alone was used, the results were very similar. The authors came to the conclusion that gr. ij. of iodoform *per diem* in three pills was an appropriate dose for moderately severe cases, and that more than eight or nine pills was not required in any case they had to deal with. This action they consider quicker than that of ergotine, and, therefore, more useful. In all the cases during the past year in which they had given it there has been no relapse, and, during the treatment, no disturbance of digestion. — *Progrès Méd.*, May 19, and *Practitioner*, July, 1888.

Correspondence.

ANTIPYRINE IN SEA-SICKNESS.

DENVER, August 27, 1888.

MR. EDITOR, — The following communication from so well-known a man as the sculptor-writer may be of interest to your readers as a contribution to the effects of antipyrine in averting sea-sickness: —

AT SEA, STR. TRAVE, 6 Aug., 1888.

DEAR DOCTOR, — I wish to send you a few lines to say that the antipyrine works wonders. I have never been to sea before without being more or less uncomfortable, the first day or two at least, even in as smooth a sea as we have had since we sailed from New York. This time, far from not enjoying every meal, I cannot get enough to eat. You can safely recommend it, for though *it* may not be the cause of my happiness, *something* is, and I am willing to give it the benefit of a doubt in the other direction. I only took it two days, — the day before sailing and the next. The ladies with me would none of them take antipyrine, and have all been more or less sick, - the youngest dreadfully so, and is no better.

Hoping you are well, and with kindest regards,

Yours truly,

PRESTON POWERS.

The above letter was written when six days out; and the dose of the drug was ten grains taken three times a day.

SAMUEL A. FISK, M. D.

"FREEDOM CURE FOR INSANITY."

BROOKLINE, September 3, 1888.

MR. EDITOR, — The *Boston Evening Transcript* of August 31st has an editorial headed "The Freedom Cure for Insanity," to which I wish to call attention, as it is unintentionally misleading.

As the text of the editorial was furnished by an article in the *Boston Morning Herald*, of the same date, on the "Boarding out of the Insane," which is a system of care for the *chronic* and practically *incurable* class, it will

readily be seen what a misnomer the title of the *Transcript* article is.

The object of this excellent experiment, which can hardly be called a substantial success until it has had a ten years' trial, is to help relieve hospitals of their surplus of old cases, which have passed the period of ordinary recovery. For this class, if carefully managed, it may to a certain extent be of use in connection with a general system of hospital provision for the insane.

However intelligent and worthy the wives of the lower class of farmers and mechanics may be, I doubt whether the *Transcript* writer would be willing to place an insane friend under their treatment, in spite of his high opinion of the "freedom cure" as he calls the boarding-out system. He would select rather the skilled medical treatment and thorough equipment of the insane hospital.

The words "freedom" and "liberty" are often wrongly applied when speaking of institution care of the insane. There are right and wrong uses of freedom, and the patient is often cured by taking away the opportunity for the wrong uses. Freedom in itself may be the worst thing possible for the patient.

Furthermore, patients in our best-managed lunatic hospitals have great freedom of action, if well enough to bear it, and often this freedom is greater than it would be at home.

No one believes more strongly in individual treatment of the insane than myself, and their treatment includes as much responsibility as the patient is equal to, but I often have reason to regret the hasty and superficial judgments expressed on this subject by persons who have had little practical experience in this direction. Writing as they do in the newspapers, they help to keep alive a spirit of distrust in lunatic hospital management, and retard the cause of hospital development.

WALTER CHANNING, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING AUGUST 25, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	754	375	28.64	10.14	18.85	1.30	2.47
Philadelphia	1,016,758	439	196	23.10	10.78	11.88	7.04	.44
Brooklyn	751,432	374	217	35.28	7.84	24.36	.56	4.76
Chicago	760,000	322	187	35.96	7.13	18.91	4.03	7.44
St. Louis	449,160	157	73	29.44	6.37	8.96	3.20	6.37
Baltimore	437,155	164	89	32.33	12.81	21.96	7.93	1.83
Boston	407,024	202	101	31.36	13.23	12.74	2.45	3.43
Cincinnati	325,000	119	—	27.52	8.55	18.06	4.30	1.72
New Orleans	248,000	100	33	44.00	4.00	24.00	7.00	3.00
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	105	53	41.48	12.35	19.95	3.80	.95
Pittsburgh	210,000	95	55	46.20	4.20	46.20	7.35	3.15
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	125,000	—	—	—	—	—	—	—
New Haven	80,000	25	14	28.00	4.00	20.00	4.00	—
Nashville	65,153	20	5	40.00	10.00	30.00	5.00	5.00
Charleston	60,145	44	24	36.32	—	22.74	6.81	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	76,328	28	16	32.13	3.57	17.85	—	3.57
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	35	22	54.34	8.58	40.04	2.86	2.86
Fall River	61,203	36	19	72.28	13.90	61.16	2.78	2.78
Lynn	51,467	17	—	—	23.52	—	—	—
Lawrence	40,175	24	10	29.12	12.48	20.80	8.32	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	14	8	57.12	—	57.12	—	—
Somerville	33,307	10	5	30.00	20.00	20.00	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	15	8	33.33	—	20.00	—	—
Chelsea	27,552	12	—	33.33	—	33.33	—	—
Haverhill	24,979	16	5	12.50	20.00	12.50	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	10	—	10.00	20.00	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	6	5	16.66	—	16.66	—	—
Malden	18,932	3	—	—	—	—	—	—
Fitchburg	17,534	11	7	—	9.09	—	—	—
Waltham	16,651	10	6	50.00	—	40.00	10.00	—
Newburyport	13,839	7	3	42.84	42.84	42.84	—	—
Northampton	13,419	8	5	25.00	25.00	12.50	—	12.50

Deaths reported 3,180: under five years of age 1,541; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,002, consumption 311, acute lung diseases 141, diarrhœal diseases 624, typhoid fever 107, diphtheria and croup 104, whooping-cough 56, malarial fever 36, scarlet fever 31, cerebro-spinal meningitis 17, measles 13, puerperal fever nine, erysipelas three, small-pox two. From whooping-cough, New York 17, Brooklyn eight, Pittsburg six, Philadelphia, Chicago, and Washington each five, St. Louis three, New Orleans two, Boston, Cincinnati, New Haven, Somerville, and Brockton one each. From malarial fevers, St. Louis 13, Brooklyn seven, New York and Philadelphia four each, Charleston three, New Orleans two, Baltimore, Boston, and Cincinnati one each. From scarlet fever, New York 19, Brooklyn four, Philadelphia three, Cincinnati and Fall River two each, Chicago one. From cerebro-spinal meningitis, Chicago six, Worcester three, New York and Boston two each, Philadelphia, St. Louis, Cincinnati, and Washington one each. From measles, New York nine, Philadelphia, Brooklyn, Chicago, and Pittsburg one each. From puerperal fever, Chicago four, New York and Washington two each, Philadelphia one. From erysipelas, New York, Chicago, and Pittsburg one each. From small-pox, Philadelphia two.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273 for the week ending August 18th, the death-rate was 16.4. Deaths reported 2954: infants under one year 931; acute diseases of the respiratory organs (London) 167, diarrhœa 301, whooping-cough 56, measles 53, scarlet fever 31, diphtheria 23, fever 21, small-pox (Oldham) one.

The death-rates ranged from 12.9 in Bolton to 22.8 in Manchester: Birmingham 13.0; Bradford 14.5; Huddersfield 13.7; Hull 14.2; Leicester 16.0; Liverpool 18.1; London 16.2; Nottingham 12.9; Sheffield 20.6; Sunderland 13.4.

In Edinburgh 15.3; Glasgow 20.1; Dublin 18.2.

The meteorological record for the week ending August 25, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Aug. 25, 1888.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	7.00 A. M.	3.00 P. M.	Daily Mean.	7.00 A. M.	3.00 P. M.	7.00 A. M.	3.00 P. M.	7.00 A. M.	3.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday, ...19	29.99	72.0	81.0	65.0	59.0	45.0	52.0	W.	W.	9	12	F.	C.		.02
Monday, ..20	30.00	67.0	76.0	62.0	71.0	73.0	72.0	W.	S.	12	8	F.	O.		
Tuesday, ..21	29.82	66.0	74.0	61.0	63.0	84.0	74.0	S.	E.	7	18	F.	R.		.04
Wednes, ...22	29.74	64.0	78.0	61.0	75.0	60.0	68.0	S.W.	N.	20	18	C.	O.		3.36
Thursday, 23	30.00	66.0	71.0	62.0	61.0	53.0	57.0	W.	W.	12	17	C.	C.		
Friday, ...24	29.90	76.0	84.0	59.0	55.0	64.0	60 0	W.	W.	18	19	C.	C.		
Saturday, .25	29.94	74.0	84.0	62.0	57.0	64.0	60.0	W.	S.W.	10	12	F.	C.		
Mean, the Week.	29.91	67.0	78.0	60.0											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FROM AUGUST 25, 1888, TO AUGUST 31, 1888.

ALEXANDER, RICHARD H., lieutenant-colonel and surgeon. Detailed a member of Board to meet at San Carlos, A. T., August 28th, to select a site for a new post at that place. Paragraph 1, S. O. 44, Division of the Pacific, August 15, 1888.

ALDEN, CHARLES H., major and surgeon. Detailed as a member of the Board of Medical Officers convened at United States Military Academy, West Point, N. Y., *vice* Major Chas. R. Greenleaf, surgeon, relieved. Paragraph 2, S. O. 199, A. G. O., August 28, 1888.

CALDWELL, DANIEL G., major and surgeon. To report to the Recorder of the Retiring Board in session at Fort Leavenworth, Kansas, as a witness in the case of Capt. Thomas Sharp, 17th Infantry. Paragraph 2, S. O. 74, Department of the Platte, August 18, 1888.

CALDWELL, DANIEL G., major and surgeon. Having completed his duty as witness before Retiring Board, Fort Leavenworth, Kansas, to return to his station, Fort D. A. Russell, Wyo. Paragraph 4, S. O. 106, Department of the Missouri, August 24, 1888.

LORING, LEONARD Y., assistant surgeon. Granted leave of absence for one month. Paragraph 1, S. O. 97, Department of Arizona, August 23, 1888.

TAYLOR, MARCUS E., captain and assistant surgeon. Granted leave of absence for four months, to take effect about October 15, 1888. Paragraph 8, S. O. 196, A. G. O., August 24, 1888.

BIRMINGHAM, HENRY T., captain and assistant surgeon. Relieved from duty at Fort Myer, Va., and ordered to Fort Klamath, Oregon, for duty. Paragraph 18, S. O. 196, A. G. O., August 24, 1888.

BALL, R. R., assistant surgeon U. S. A., Fort Riley, Kansas. Ordered to Fort Servis, Colorado, for temporary duty. Paragraph 5, S. O. 108, Department of the Missouri, August 27, 1888.

SWIFT, EUGENE L., assistant surgeon. Upon being relieved from temporary duty at Fort Klamath, Oregon, to return to his proper station, Fort Spokane, W. T. Paragraph 18, S. O. 196, A. G. O., August 24, 1888.

RAFFERTY, OGDEN, assistant surgeon. To proceed from Fort Clark to the camp at the Department Rifle Range near San Antonia, Tex., and report for temporary duty. Paragraph 3, S. O. 85, Department of Texas, August 15, 1888.

RAFFERTY, OGDEN, assistant surgeon. Upon conclusion of Department Rifle competition, will report to the Inspector of Rifle Practice, Division of the Missouri, for assignment to duty in connection with the Division Rifle Competition as camp surgeon. Paragraph 4, S. O. 86, Department of Texas, August 17, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING SEPTEMBER 1, 1888.

CRANDALL, R. P., assistant surgeon. Detached from the "Saratoga" and wait orders.

DU BOSE, W. R., passed assistant surgeon. Detached from the "Jamestown" and to the "Constellation."

ARNOLD, W. F., Nashville, Tenn. Commissioned assistant surgeon in the Navy, August 18th.

LUNG, GEORGE A., Canandaigua, N. Y. Commissioned assistant surgeon in the Navy, August 18th.

SOCIETY NOTICE.

GYNÆCOLOGICAL SOCIETY OF BOSTON. — The next meeting of the Society will be held at No. 19 Boylston Place, on Thursday, September 13th, at 4 o'clock, P. M. Paper: "Antiseptics in Gynæcological and Obstetric Operations," by Dr. F. L. Burt. Drs. E. W. Cushing and F. L. Burt will show interesting pathological specimens.

H. J. HARRIMAN, M.D., *Secretary*.

OBITUARY. GEORGE D. TOWNSHEND, M.D.

Dr. George D. Townshend, a prominent physician of Roxbury, died at Norfolk, Va., August 20th, in his forty-seventh year, after a protracted and painful illness which culminated somewhat suddenly. Dr. Townshend was born in Providence, R. I., and was a paternal great-grandson of General Glover, and a maternal grandson of General R. E. Lee. He graduated at the Medical and Surgical College in Philadelphia, where for six years he was lecturer and demonstrator of anatomy and surgery under Dr. Agnew. During the late war he was a surgeon in the Army of the Potomac. After the war he settled in Norfolk, Va., where he secured a large practice. The hostility of the South against Northerners engendered by the war, induced him to abandon this field, and in 1877 he removed to Massachusetts and settled in Roxbury, where his ability and industry gained him a good practice. He served for some years as Secretary of the Norfolk District Medical Society and later as its vice-president.

BOOKS AND PAMPHLETS RECEIVED.

Antipyrine. By Benjamin Marshall, M.D., San Francisco, Cal. Reprint. 1888.

The Physician's Leisure Library.— Abdominal Surgery. By Hal. C. Wyman, M.S., M.D., Professor of Surgery and Operative Surgery, Michigan College of Medicine and Surgery.

Sanitary Science in the Home. By Mrs. R. H. Richards. Philadelphia. 1888. Reprint.

Announcement for 1888-1889 of the Medical and Dental Departments of the National University, Washington, D. C.

Sixth National Convention of the Bureaus of Statistics of Labor in the United States, Indianapolis, Indiana, May 22 and 23, 1888.

The Electro-Magnet in Removal of Steel from the Interior of the Eye. By Alvin A. Hubbell, M.D., Buffalo, N. Y., Professor of Diseases of the Eye, Ear, and Throat in the Medical Department of Niagara University. 1888. Reprint.

Some of the Advantages of the Union of Medical School and University. An Address delivered at Yale University, June 26, 1888. By William H. Welch, M.D., Professor of Pathology in Johns Hopkins University. 1887. Reprint.

University of Denver, Col.: Eighth Annual Announcement of the Faculty of Medicine, 1888-89.

The American Hip-Splint. By Dr. A. B. Judson, of New York. Reprint.

Third Annual Report of the State Board of Health of the State of Maine for the Fiscal Year ending December 31, 1887.

Original Articles.

TWO CASES OF APPENDICITIS, ONE FATAL.

BY C. ELLERY STEDMAN, M.D., DORCHESTER.

A. B., AGED forty-one, a wool merchant, married, having two children, spare, abstemious, sandy complexion, travelled a good deal in the West on business; called himself a healthy man. But I attended him in 1882 for a prolonged attack of acute rheumatism, which left him much weakened, and from which he convalesced at Richfield Springs. In the past eleven years he has had several attacks of dysentery, and he suffered from constipation last winter. The testicle on the right side had never descended, and he always wore a truss, for what reason I never learned, as there were no symptoms of hernia. His parents were consumptive, and a sister died of phthisis.

On the morning of the 29th of March, 1888, he began to feel uncomfortable, and vomited in the afternoon: this he attributed to a richer breakfast than usual. The vomiting was followed by abdominal pain in the afternoon of no great severity: he felt a little chilly, but had nothing like a rigor. I was called early in the morning of the 30th, and found the patient suffering from the usual symptoms of colic. He was inclined to ascribe his distress to the missing testis, which he believed would "kill him some day." The little finger, however, passed into the inguinal canal easily, and far enough to eliminate the possibility of strangulated hernia. The pulse was but little quickened, and no fever was noticed. Towards afternoon, the pain, which had been quieted by a quarter of a grain of morphia, became more severe, and occupied the loins and right lower part of the abdomen, and the vomiting of bilious matter continued: the belly, which was naturally full, though tender on pressure, was little, if any, swollen; there had been no dejection.

31st. The temperature rose to 102°, and the pulse to 100: pain occurred as soon as the effect of morphia abated. Late in the afternoon the pain was intolerable, in the groin especially, shooting down into the penis: vomiting was distressing, and the countenance began to grow pinched: there was no escape of flatus nor any dejection. These conditions, with swelling and tympanites, were maintained till the 3d of April, the sixth day of the disease, when the suspicions of appendicitis grew stronger, and Dr. Fitz (who has kindly allowed me the use of his notes) was asked to see him.

The vomiting continued frequent, without offensive odor, both it and the abdominal pains causing sweating. Last night, a second attack of intense pain occurred, like that of yesterday. An enema discharged some scybala for the first time. The countenance was anxious, the pupils contracted, the skin not very hot, though he complains of flushes of heat. The abdomen considerably swollen and tympanitic, more marked in the right iliac fossa, where the outline of the cœcum is perceptible: slight dulness in that situation, but no tumor was recognized: the tenderness does not extend into the right loin. The severest pain is over the right inguinal canal, where there is a circumscribed resistance, and along Poupart's ligament, near the iliac spine: the right testis has never descended, and cannot be felt: there is sensitiveness on palpation in the left iliac region: the hypogastrium resonant, but not painful. On rectal examination, there is felt in the pelvis an elastic, rounded tumor, pressure on which causes pain locally and in the right iliac region. The urine passed freely during the day, the tumor persisting after micturition.

The gravity of the situation being explained to the family, Dr. Bolles was consulted with a view to immediate operation, and he saw the patient at once. But in the two hours which had passed there had been a remission in the symptoms: less pain, less swelling, a fall of temperature and pulse. The patient expressed himself so much relieved that the operation was not insisted on that night.

Next morning, the seventh of the disease, Drs. Fitz and Bolles saw him with me, and found him calling for something to eat. The vomiting had ceased at six o'clock that morning; the abdomen was less tense; there was no increased local tenderness; no tumor could be felt in the right iliac fossa. Pulse 104, temperature 99.4°. The operation postponed for more decided indications.

On the tenth day of the illness there was a slight chill at 3 o'clock, A. M., and the temperature shot up from 97° to 100°: loose dejections were passed; gruel, chicken-broth, tea, and toast allowed in sufficient amount.

12th. The temperature touched the normal figure in the evening: twenty-five drops of elixir of opium once or twice a day makes the pain bearable: abdominal distension less. Micturition frequent; urine normal in quantity.

16th. Induration detected in right iliac fossa; also a tumor discovered in the right inguinal canal, an inch below Poupart's ligament: it has the same size, shape, and density of the left testis, is not affected by coughing, is reddened, and is the source of much discomfort. The abdomen moderately distended; generally tympanitic; somewhat dull in right iliac fossa, specially so in right lumbar region; right rectus indurated, resisting deep palpation. Rectal examination shows the pelvic tumor still persistent, moderately tense, rounded. The temperature ranged, this week, from 99° and a fraction in the morning to a little more than 102° in the afternoon. He was taking one or two pints of champagne during the day; the pulse was 115 to 120, the face was pinched, and the patient evidently failing. The operation having become imperative, was done in the forenoon of the twenty-first day of the disease by Dr. John Homans.

After etherization, an incision was made just above Poupart's ligament, and carefully carried down to the peritoneum, which was torn off the iliacus muscle by the finger. The abscess was not readily reached, but by firm pressure on a point towards the left of the median line the finger was pushed through the peritoneum into a pus-cavity in the pelvis: out of this, on the withdrawal of the finger, spouted fully a pint of dirty, brown, highly offensive pus: following this, some yellow, flocculent fæces and gas.

The cavity was washed out with hot carbolized water, and a drainage-tube six inches long thrust down to the bottom of the wound. The rectal tumor disappeared with the evacuation of the matter. The temperature after the operation fell to 98.4°, and the pulse to 110.

In the afternoon, a chill sent the temperature to 102° and the pulse to 140, but he had a comfortable

night. The discharge of pus was very little, and milk nearly digested came through the tube, which was flushed every two or three hours with carbolized water. The range of temperature became irregular, dropping from 100.2° on the twenty-fifth day to 97°: the patient gradually failing, though he took milk and champagne in good amount. Thirty drops of tr. opii deodoratis would secure a good night.

Twenty-third day. At noon he complained of great pain in the left of the lower abdomen, which was repeated on following days.

Thirty-third day. The incised opening discharges freely fæces and gas. The borders of the wound show small sloughs: the rectal tumor no longer apparent. The nourishment is chiefly milk, and a quart of champagne is consumed daily. To-day is the first dejection per anum since the operation, and less discharge by the drainage-tube. Fæces appeared in the urine, with pain in micturition, and urine escaped by the wound, with little or none passing by the urethra.

Thirty-fourth day. The swelling in the scrotum broke to-day, discharging pus, and the tumor disappeared. After this he was tolerably comfortable, though weaker.

Thirty-fifth day. The opening into the scrotum was enlarged by incision by Dr. Homans. The next day he had a dejection per anum, and on the thirty-ninth day of his illness — the 6th of May — he died at 2.45 P. M.

The autopsy was made by Dr. Fitz. The abdomen only was examined. Coils of small intestine, the descending colon, sigmoid flexure, cœcum, and anterior abdominal wall united by fibrous adhesions easily torn. The pelvic portion of the peritoneal cavity was thus shut off, and held, perhaps, a half-pint of yellowish-gray, viscid pus. The cavity communicated freely with the incised wound in the right iliac fossa. The stump of the vermiform appendix, about half an inch long, opened directly into the upper part of the cavity. Its mucous membrane was thickened, reddened, and the surface rough. On the posterior wall of the bladder, about an inch and a half from the posterior border of the prostate, was a sharply-defined wound opening, quarter of an inch in diameter, through which the bladder and abscess-cavity freely communicated. The mucous membrane of the bladder was injected. The kidneys were normal. The right testicle was attached to the right abdominal wall at the brim of the pelvis: it was small and soft. On isolating the coils of small intestine forming the loop of the abscess, the walls were easily torn in several places. The mucous membrane of the lower part of the ilium and of the cœcum were normal. The peritoneal coat of the ilium showed numerous fibrous shreds and patches.

The second case was that of J. H., a large, fair man, thirty years old, foreman of the paint-shop in a large smithy. A year ago last fall he sustained a severe injury in one hand. He said that he was subject to constipation, which was relieved by beer, and he was thus induced to take a full allowance. He had had several attacks of colic, one or two of which I saw, the cause of which seemed to me to be gall-stones, having the symptoms of sudden pain just to the right of the epigastrium, and vomiting, yielding to opiates, so that on the third day he could go to work again. On the 15th of April (when my other patient had been ill eighteen days), Mr. H., who had been complaining for several days with dyspepsia and constipation, was taken in the night with acute abdominal pain, and sent to my house for an opiate.

On the 18th I was called to see him, and found that this time his pain was referred to the right and lower part of the abdomen: there had been no chill: he did not vomit till after he had several doses of opium. He preferred to lie with his knees drawn up: there was tenderness, not excessive, all over abdomen, but no tumor could be felt. Sleeplessness was his chief complaint, though he had had full opiates. The temperature was normal, and the pulse about 80. These conditions held for two days, and it was not till a fortnight afterwards that I learned that about the fifth day of his illness, being a little light-headed through opium, he dressed in ulster, trousers, and slippers, and crossed the street to his father's house, despite the efforts of his wife to restrain him. On the seventh day his temperature and pulse were increased, and, for the first time, a tumor, could be felt along and above the right groin, while, per rectum, the same could be detected and compressed by bimanual palpation. Dr. Fitz kindly saw him the next day in consultation, and procured his admission to the Massachusetts General Hospital.

Here, I understood, on the tenth day after his illness began, an operation was prepared for, but the preliminary examination showed a decided diminution in the size of the tumor, as compared with the day before; there was less pain and free defæcation, and the temperature gradually dropped to the normal standard. By the thirty-eighth day no tumor was to be felt in the iliac fossa on abdominal palpation, but a slight fulness could be detected on rectal examination. Discharged 24th of May.

The interest of these two cases to those chiefly concerned lay in the diagnosis and in the question of operation. Abundant information on these points in general is contained in the treatise of Dr. Fitz on this subject, published in 1886.

In a second paper (*N. Y. Medical Journal*, May 12, 1888), the same author sums up in these words: "It is the duty of every physician to be mindful that, for all practical purposes, typhlitis, perityphlitis, perityphlitic tumor, and perityphlitic abscess mean inflammation of the vermiform appendix; that the chief danger of this affection is perforation; that perforation, in the great majority of cases, produces a circumscribed, suppurative peritonitis, tending to become generalized; that, in the light of our present knowledge, the surgical treatment of this lesion offers the best chances for the life and the future health of the patient; and that the progress of the disease needs to be watched with knife in hand."

In the first case the situation was complicated by the undescended testis, and the diagnosis was settled on the fifth day, the determining symptom being the resistance and dulness felt about the right groin, following the renewal of intense pain, the tympanites, and the rise of temperature. An immediate operation was prepared for, and would have been done at once — in the night — had there not been an extraordinary remission of all the symptoms. The second case was not seen till the third day, as the patient supposed that the attack was one of biliary colic, like those he had been subject to. He afterwards recognized the difference in his sensations between this and former attacks of colic. It was not till the seventh day, two days after his excursion across the street, when I

thought him snug in bed, that fever came on, and I could feel the tumor above the groin and in the rectum, although I had, with the former case in my mind, been watchful of the symptoms. This patient also missed an early operation on account of a remission in the symptoms. Should his appendix ever see the light, it would be instructive to know whether it contained a gall-stone — for such a concretion has been infrequently discovered lurking in the appendix — and I consider that his earlier attacks were correctly diagnosticated.

Hospital experience early drew my attention to this class of cases, and I have seen a few in private practice, all of whom did well, the tumor in each being small and the symptoms not alarming. But I do not always find it easy to diagnosticate them as early as I should like, and I have found the tumor developed later than in cases described by others. But if the physician bears in mind that each patient who cries out with colic may be threatened with this disease, and if palpation of the abdomen is carefully employed in obscure or doubtful cases, he is not likely to be found often astray.

It is easy to be wise after the event, and to wish that the first patient had been operated on when the first preparations were made. But it was by no means easy to reach the abscess, large as it was, when laparotomy was done, and at an earlier time it might have been missed altogether, for I have heard that this operation has been abandoned from inability to find the source of disease. The marked improvement was no greater in A. B. than in J. H., who escaped laparotomy altogether after it had been postponed, as it was in A. B.'s case.

GELSEMIUM SEMPERVIRENS.[1]

BY G. M. GARLAND, M.D.,
Instructor in Clinical Medicine, Harvard Medical School.

The virtues of gelsemium have long been known to the eclectics, and many a celebrated eclectic febrifuge has owed its efficiency to this potent remedy. The gelsemium plant is a trailing woodbine which is familiarly known as Carolina jasmine or yellow jasmine from the color of its blossom. Flowering during March and April, it is a beautiful feature of the southern landscape as it hangs from the branches in festoons of bright yellow blossoms which fill the air with a fragrant perfume. Confined in a close room, however, the odor of these flowers is depressing, and causes headache. The root of the vine is the part endowed with medicinal properties; and the ordinary pharmaceutical preparations are a powder, an extract, and a tincture. It is well to say at the outset that gelsemium is an extremely powerful drug; and as its preparations vary widely in strength, it is wise for one to begin cautiously with those which are unfamiliar to him.

Potter describes the physiological action of the drug as follows: "Gelsemium is a powerful motor depressant, causing paralysis of motility and depression of sensibility by central action on the spinal cord. It is also antispasmodic and diaphoretic. In moderate doses it produces languor, slowing of the cardiac rate, enfeebled muscular action, impaired sensibility, drooped eyelids and dilated pupils, with some diaphoresis. In toxic doses, as a teaspoonful of the fluid extract, it produced vertigo, diplopia, drooped eyelids and dilated pupils, (paralysis of third nerve), labored respiration, slow and feeble heart, dropped jaw, staggering gait, extreme muscular weakness and almost complete anæsthesia, profuse diaphoresis, loss of articulation, and death of asphyxia from paralysis of the muscles of respiration, consciousness being preserved until CO_2 narcosis sets in. Convulsions occur in animals with backward movements, but not in man. Motion is affected before sensibility in warm-blooded animals, sensibility before motion in frogs. Gelsemium is not an arterial depressant, although it lowers the heart-rate, and is not irritant to the gastro-intestinal tract, but it produces a decided lowering of the body temperature. The effects of a moderate dose pass off in about three hours."

Phillips says it affects the sixth nerve before the third, as the external rectus is the first muscle weakened. Tweedy states that it impairs the power of accommodation of the eye for near objects, and one lady in my own practice complained after taking a moderate dose of gelsemium, that the dishes on the table appeared a long way off to her.

At the time I began to use gelsemium, eight years ago, there was very little said about it in our journals, and I was obliged to feel my way along with it. I began with the fluid extract and soon learned that it was a very powerful remedy, and I also learned that it is advisable to forewarn a patient of its peculiar action upon the eyes or it may create a family panic. I have been summoned several times to allay such panics where I have neglected this precaution.

I propose to specify in this article some conditions in which I have found gelsemium useful for mitigating suffering and correcting perverted nervous functions. Foremost among such conditions come *hysteria*. In those crises of cerebral excitement, which were formerly combatted by assafœtida and valerian, I know of no drug which can excel gelsemium. Inasmuch as it affects the motor regions of the nervous system before the sensory, it is usually necessary to push its administration until diplopia and heaviness of the lids appear, in order to reach satisfactory results. The following cases will illustrate its use:

A lady, subject to nervous attacks and severe neuralgia of one arm, was overcome by a visit of sympathy to some of the sufferers by the Bussey bridge disaster. She returned in a hysterical condition, talking excitedly about the suffering she had witnessed, weeping profusely, and holding on to her arm which pained her excessively. Her entire body was twitching and she could not control herself. Gelsemium, pushed to heaviness of the lids, enabled this woman to pass a comfortable night and resume her domestic duties on the next day.

A dressmaker called at my office at noon, complaining of great nervousness, sleeplessness of several days' standing, a feeling of a bunch in her throat and inability to eat or to attend longer to her business. I gave her a few drops of gelsemium, and ordered the dose repeated every hour until relief was obtained. She reported upon the following day that the second dose compelled her to close her eyes, and she slept several hours, awakening greatly refreshed and relieved of her distress.

Again, as a remedy for certain kinds of headache,

[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, on the occasion of the annual meeting of the Massachusetts Medical Society, June 12, 1888.

gelsemium has no rival. Catarrhal headaches, and those which accompany dysmenorrhea and nervous debility from overwork, are amenable to gelsemium. This drug will also conquer neuralgias of the superior branch of the fifth pair when they are not referred from neighboring inflammatory or irritated conditions which should of course be sought out and treated if present. The headaches of Bright's disease may be mitigated by gelsemium, but I have had no success with it in ordinary bilious or sick-headaches.

CASE I. Catherine Driscoll entered Carney Hospital with the history of constant pain in the upper part of her head for five weeks. She had tried various remedies without relief, and finally she had resorted to morphine, which was required in large quantity to stop her pain. Upon the first day in the hospital she was given guarana and bromides, but without producing any impression. At the next morning visit she was ordered one pill of atropine containing one sixtieth of a grain and five drops of the fluid extract of gelsemium, repeated every twenty minutes until she had received twenty drops. The pain almost entirely left her before night. A similar dosage was repeated on the following day, and the cure was complete in four days. Her general condition began to improve immediately. I will add that the morphine was stopped entirely at the beginning of this treatment.

CASE II. Joseph O'Neil entered the hospital for severe frontal pain of several weeks' standing. As there were specific antecedents in his history, he was given Shaw's mixture for a few days, but without effect. Then he was ordered three drops of gelsemium every twenty minutes until twenty drops were taken. This treatment produced immediate relief from the severity of his pain, but was continued twenty-two days before the cure was complete.

CASE III. Patrick Foley, forty-two years of age, appeared at the Boston Dispensary with a headache of six days' standing. "Regular racking pain in the forehead." Begins at 9 A. M., and lasts all day. Does not ache at night. Sleeps well. Appetite is good. Bowels very regular. Has no idea what started his headache. Came on while he was at work as longshoreman. He has a slight headcold, but he has that often. Pulse 72. Forehead is covered with blisters from the strong ammonia which he has applied. He was ordered one pill only of atropia, one-hundredth of a grain, and three doses of the fluid extract of gelsemium every half hour until physiological effects are produced or relief obtained.

Upon the following day he reported great improvement. He took three drops every half-hour until he had taken forty-five drops, and then felt as if he were intoxicated. "Dizzy and flimsy like," but not sleepy. The light looked hazy about him. He felt slight headache on awaking in the morning, and took three drops more, which affected him immediately. He has a slight pain now, but yesterday morning it was so great that his hat seemed lifting off from his head.

This was evidently a headache associated with a slight head-cold. It is noticeable that one dose on the second day produced symptoms which required forty-five drops on the previous day. Pain seems to be an antidote to gelsemium as it is to morphine, and physiological effects appear more readily after the pain has abated. The next case also illustrates this point.

CASE IV. J. A. M., merchant. Appeared at my office on a Friday. He had contracted a head-cold on the previous Monday, and this quickly developed a severe frontal neuralgia, which was constant during the day, although it did not prevent sleep at night. His nose was stopped up, his eyes were swollen and ached badly. I gave him a mixture containing two drachms of the fluid extract of gelsemium in four ounces of water, and told him to take a spoonful every two hours. His headache ceased that afternoon. Next day he took one dose upon rising and one more about ten o'clock, when he found that he could not see, and he staggered against people. A friend thought he was intoxicated. Four hours' sleep restored him to equilibrium and he had no more trouble from his headache or his cold.

In the early stage of acute bronchitis when the cough is disturbing, tubes are dry, and there is pain across the chest, gelsemium will relieve this distress, start up the bronchial secretions, thereby furnishing material for expectoration and diminution of the inflammatory tension. The bronchial glands are not the only ones influenced by gelsemium. The sweat glands are also subject to its action, and, given under proper conditions, this drug is an unfailing diaphoretic. Follicular tonsillitis is usually accompanied by soreness of the throat, high fever, neuralgic pains in the head, back and legs, all of which discomforts abate rapidly with the diaphoresis induced by gelsemium. In such cases I cover the patient with plenty of blankets, order him to keep his arms and hands under the clothing, and give him three to five drops of gelsemium every hour until he sweats or has taken fifteen to twenty drops.

The relief to the suffering is rapid, and the patient usually sleeps while he sweats. Acute muscular rheumatism is also amenable to this kind of sweat. Gelsemium will allay excitable reflexes, and diminish the nervousness of passive cerebral congestion, and some writers claim good results from its use in acute meningitis.

Dr. McKay, of St. Louis, recommends gelsemium to replace quinine for malarial chills. He gives one-quarter to one-half drop doses of the fluid extract every twenty minutes, beginning three hours before the expected chill, and he has had excellent results from this treatment. Dr. Charles G. Davis, of Chicago, gives small doses of gelsemium to soften a rigid unyielding os, and he says that fractional drop doses at frequent intervals will diminish after-pains. Dr. M. L. Chamberlain, of Boston, combines gelsemium with quinine to correct the ringing in the ears and headache, which the latter drug often cures. By means of this combination he has been able to give quinine to sensitive patients, who were otherwise unable to take it.

The dose of gelsemium depends upon the preparation used and the results which one desires to obtain. For the relief of neuralgias one should give three to five drops every half-hour or every hour, according to the intensity of the pain. To produce sweating, one drop every half-hour is sufficient, but the patient should, of course, be well covered up in bed, and protected from the cooling effects of surface evaporation. One drop of the fluid extract every hour will relieve the cough and discomfort of acute bronchitis, and fractional drops can be used as above cited. The tincture of gelsemium is slightly weaker than the fluid extract. The active principle in gelsemium is gelsemin, which can be given in one-quarter to one-half grain doses, but I pre-

fer the plain drug itself. For convenience the extract and tincture can be prepared in tablet form of one minim each, and then dissolved for fractional doses.

In regard to antidotes for gelsemium, Potter says: "Morphine is the most complete antagonist, so are also digitalis, ammonia, alcohol, and to some extent the tincture of xanthoxylum fraxineum. Emetics, heat, faradization of the respiratory muscles and artificial respiration are measures of prime importance. The cardiac alkalies and tannic acid are chemically incompatible."

The advantages which gelsemium can legitimately claim are:

1. It has an agreeable taste, and is not repulsive to adult or child.

2. It does not irritate the stomach or bowels.

3. It produces no depressing after-effects from ordinary doses. The sleep is natural and the patient awakens refreshed.

4. In ordinary doses it causes no depression of the heart, and it can be used in all forms of organic disease of the heart.

5. It does not create a habit. There is no depression of nerve centres following its use, and therefore no craving for more of it.

6. Its toxic symptoms are very characteristic and striking, and they appear early, so that plenty of warning is given.

DEMONSTRATION OF A MODEL OF FROZEN SECTIONS OF THE ARM, WITH REMARKS ON THIS METHOD OF TEACHING ANATOMY.[1]

BY THOMAS DWIGHT, M.D.,
Parkman Professor of Anatomy at the Harvard Medical School.

I have the honor of showing the Society to-night the plaster model of the arm of twice the natural size by linear measurement. It is cut into a series of slices, seventeen in number. This is a very accurate model of an arm made into frozen sections during the past winter at the Harvard Medical School. It lies in the stand with the outer side of the shoulder looking upward, and the forearm is moderate pronation. The surfaces of the slices are painted from the actual specimen. As I believe I may claim to have introduced the study of frozen sections into American schools, I would take this opportunity of saying a few words on their value as means of learning and teaching anatomy, and of the proper method of using them.

The first feeling in attempting to understand a frozen section is one of bewilderment. Hyrtl called them anatomical puzzles. It is not till one has acquired a certain familiarity with them that they become intelligible. This familiarity comes much more quickly if the sections admit of being put together so that the student may both see where the line of section falls and also imagine the position under the surface of the body of the various structures which he sees cut through. One of the great advantages of a model of this kind is that when a slice is taken out to be shown the others remain in place, and the student sees precisely where it comes from. It is evident, also, that for the lecture-room the actual sections, with the exception, perhaps, of those of the trunk, are too small, hence the advantage of enlarged models, or, failing these, enlarged diagrams.

[1] Presented before the Section for Clinical Medicine, Pathology and Hygiene of Suffolk District Society, on the occasion of the annual meeting of the Massachusetts Medical Society, June 12, 1888.

Allow me now to show this model in some slight detail. We recognize here on the surface the projection formed by the head of the humerus, and the faint outline of the acromion and clavicle. This section shows us the large head of the humerus, the detoid covering it, the deeper muscles passing to the tuberosities, the long head of the biceps in the groove. Lower down we see the narrow neck, the circumflex nerve and vessels curling round it, so that we can see from which side the joint may be best opened for a resection without injury to this important nerve. The piece being replaced, we see the groove along the outer edge of the biceps, in which runs the cephalic vein. The inner groove, the guide to the artery, is hidden as the arm lies. We, therefore, on taking out a slice, find the artery at the lower side. By examining a series we follow the course of the musculo-spiral nerve twisting round the humerus. Lower down we see the olecranon and the outer condyle, and can easily imagine the point a little below and behind the latter where we should feel for the head of the radius. We verify all these points on the sections which are here very striking, owing to the great changes of form which rapidly succeed one another. We see the ulnar nerve in the hollow between the olecranon and inner condyle. The bifurcation of the brachial is somewhere in the thickness of one of the slices. In the same way we can study the changes of size, shape, and relative position in the bones of the forearm. The transformation of muscles into tendons, the arrangement of the latter at the wrist, the complication of the bones of the carpus, and the simplicity of the succeeding metacarpus are shown on the following slices.

Two criticisms were made some years ago by Professor Ranney, of New York, on the value of frozen sections. The first one was that you never find two alike. This, to my mind, is a very puerile objection. Indeed, it is rather to be regarded as a compliment, for it shows that the sections tell the truth. What two bodies are perfectly alike? And if the surface differs the section must necessarily differ also. Further, as is well known, both to anatomists and clinicians, the position of the internal organs is by no means always the same, and this is never shown so strikingly as by frozen sections. The second criticism, on the other hand, is a very weighty one. It is that frozen sections show structures as they are in the dead, and not as they are in the living body. Apart from the influence of cadaveric changes, the element of muscular tonicity is usually wanting, and this has its effect on the soft parts. Perhaps it has already occurred to some of my hearers that this model is very evidently one of a dead arm. Such it undoubtedly is. My reason for having it made thus was that I wished the sections to be drawn from the actual specimens, and I preferred copying a dead arm accurately to having the handsomer model of a living arm, and painting the sections by guesswork to make them correspond. I am far from considering that this drawback detracts seriously from the value of frozen sections, but the fact must be borne in mind.

In frozen sections through the pelvis the anus is almost invariably patulous. In the museum there is a median section of the pelvis made by Dr. L. J. Mixter, in which the walls are in apposition for about an inch where the sphincter ani surrounds it. I presume the subject must have been at least slightly frozen soon after death, during the rigor mortis, before the sphinc-

ter became relaxed. I can see no reason to doubt that under these circumstances the relations are those of life.

I have used frozen sections for years in teaching anatomy, and expect to use them more year by year. The Warren Museum of the Harvard Medical School contains probably by far the finest collection in the country. I hope members of the Society will not fail to visit the museum, and will especially notice a section made by Dr. O. K. Newell from the crown of the head through the pelvis. There is now making a model of the leg on the same scale as this one of the arm.

Before closing, I would say a word on the use of the living model in conjunction with frozen sections. There is nothing original certainly in the use of the living model. I remember when I was a student Dr. Bigelow occasionally introduced one. Dr. Holmes showed the "living skeleton" to the class, and other gentlemen have occasionally used models.[2] I have found, however, that the model deserves a regular place among the methods of anatomical teaching, and have used him regularly for years, but I recently have adopted the plan of using the live model in conjunction with frozen sections, and I believe that much is to be gained by the combination, as one method assists the other.

REPORT ON PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

TREATMENT OF HERNIA CEREBRI.

MACLAREN [1] reports a case where a man on the third day after a fracture of the skull had the depressed fragments elevated and the loose fragments of skull removed. A hernia cerebri was first cut off on the ninth day. On the forty-second day the hernia cerebri was removed for the third time, and a silver plate was firmly secured inside the skull. The plate was a florin rolled out to about four times its original size. It was then cut down to fit the opening in the skull, and was made self-retaining by nicking its edges. It did not fit exactly, which Maclaren considered an advantage, as it allowed drainage. So long as the plate was in position no hernia cerebri occurred, and there was singularly little irritation. The plate was removed on the one hundred and fourth day, the edges of the scalp pared and brought together.

BONY ANKYLOSIS OF THE TEMPERO-MAXILLARY JOINT AND ITS TREATMENT.

G. Zipfel [2] has made a careful study of five cases treated by osteotomy and twenty-one cases treated by resection. Osteotomy he speaks of as performed in the following different ways: (1) It may be linear, through the condyles of the maxilla; (2) cuneiform invoving the neck of the condyle; (3) linear, through the coronoid process; (4) linear, through the neck of the condyle and the coronoid process together. Zipfel considers that resection is preferable and proposes the following operation:

1. An incision is to be made four cm. long, starting from the supra-glenoid root of the zygomatic arch running downwards and slightly forwards, and not extending deeper than the subcutaneous cellular tissue for fear of wounding the tempero-facial nerve, which the author finds crosses over just an inch below the arch; if the coronoid process has to be dealt with, an extra incision of three cm. has to be made running in the direction of the zygoma, and, therefore, harmless.

2. Recognize and push aside the lobules of the parotid gland. Keep the nerve-trunks out of the way by means of a blunt hook; the condyle and its neck can then be easily got at.

3. The periosteum has to be scraped off the bone, care being taken not to wound the maxillary artery.

4. A curved sound with a groove is passed beneath the condyle and along it is slid a chain saw. In operating, the buccal cavity is not opened.

[1] Tr. Clin. Soc. Lond., Vol. XIX, 1886, p. 159.
[2] Gazette Médicale de Paris, July 2, 1887.

[2] To Dr. Keen, of Philadelphia, belongs the credit of having done the most to make this method of instruction popular in America.

THE PROGNOSIS OF EXTIRPATING THE LARYNX.

Maydl [3] states that in one of his cases which had been free from recurrence for twenty-five months, this afterward occurred, and he, therefore, believes that a case cannot be considered to be definitely cured until three years after operation, merely because recurrence has not been observed within this time. Of sixty-five cases operated on thirty died in a short time after operation, twenty died within nine months after operation from recurrence. Eight cases were at this time without recurrence, but in only two cases could it be said that a definite cure had been effected (thirty-four months and four years after operation.)

Sir Morel Mackenzie [4] has collected one hundred and three cases of extirpation of the larynx for carcinoma, and six for other causes, a total of one hundred and seventeen. Of these twelve, or about ten per cent., lived twelve months after the operation.

ACUTE THYROIDITIS.

Dr. Barlow [5] read a paper on "Acute Enlargement of the Thyroid Gland," at a recent meeting of the Clinical Society, and he related the case of a little boy, aged three, in whose thyroid gland an attack of inflammation occurred, which lasted altogether about a fortnight. The child had just previously suffered from erythema nodosum on the legs, and it was whilst recovering from this affection, and after having been out in the park, that the thyroid enlargement commenced in association with a nasal catarrh, of which the chief symptom was a discharge of thin glairy mucus. Reviewing the literature of the subject, Dr. Barlow arrived at the conclusion that his case must be regarded as coming under the "idiopathic" class of Lucæ, and although there had been erythema and nodosum, still the absence of arthritis and heart disease or other genuine rheumatic manifestations formed a warranty for not considering the case as of true rheumatic nature. Some observers, chiefly abroad, have noted a rheumatic swelling of the thyroid having a definite relationship with well-founded rheumatism: and Dr. Angel Money quoted a case of this character from his own experience. Mr. James Berry narrated many interesting particulars concerning acute enlargement of the thyroid gland; and some of these having a fatal ending might tally with cases like the one narrated by Dr. Barlow, in which the enlargement at one time had a threatening aspect. Nevertheless, the definite cycle run by cases of rheumatic and idiopathic descriptions must, we think, be held to differentiate them from or-

[3] Jour. of Laryngology, April, 1887.
[4] Jour. of Laryngology, Dec., 1887.
[5] Med. News.

dinary goitre, in which the mode of commencement may be acute, but the course always chronic, and showing recurrent tendencies. The perusal of Dr. Barlow's paper will raise the reflection that the causation of acute thyroid enlargement is as imperfectly known as it is seemingly various.

THE TREATMENT OF CAROTID HÆMORRHAGE.

In four cases Treves [6] has successfully treated severe carotid hæmorrhage, by the following method:

In the neck, pressure upon the carotid artery cannot be applied with success, or maintained for a serviceable length of time. The vessel can, however, be very readily occluded for a while and the carotid circulation arrested without the artery being permanently closed. This is effected by exposing the artery in the usual way and passing around it a thick piece of soft catgut. This is tied in a very loose loop. By pulling upon the loop the circulation through the vessel is at once arrested, but is, however, at once restored when the tension upon the loop is relaxed. Without discussing the possible value of this procedure, the following case may be briefly detailed.

A man, aged twenty-five, was brought to the London Hospital in 1880, bleeding profusely from a deep wound in the neck, about the level of the great cornu of the hyoid bone. While attempting to open a soda-water bottle the bottle burst, and a fragment of glass was driven into the neck. The cut made was less than one inch in length. The glass had been removed. The bleeding had been very profuse, and was arterial. The patient was blanched and almost insensible. The radial pulse could scarcely be felt. The bleeding was for the time checked by pressing a tampon against the wound. It was obviously useless to attempt to find the bleeding point while blood was welling up from so deep a wound. I, therefore, at once exposed the common carotid artery through a lower incision and placed a catgut loop around it. Traction upon this arrested all bleeding. The patient was placed in bed and surrounded with warm bottles. His condition was so grave that I did not feel disposed to search for the bleeding point. Traction upon the loop was maintained for half an hour. On relaxing the catgut no bleeding took place, and it never again recurred. The loop was left *in situ* for four days, when it was removed. The man, who was in vigorous health at the time of the accident, made a rapid and uninterrupted recovery. I supposed the bleeding to have come from the superior thyroid artery.

ŒSOPHAGOTOMY.

Fischer's analysis of seventy-nine cases of this operation on account of foreign bodies [7] yields the following information: Number of cases, 80; 62 successful, 16 fatal; shortest interval between accident and operation, one-half hour, and longest twelve years. The foreign bodies in a majority of cases were bones or artificial teeth accidentally swallowed while eating. Fischer regards the operation as one of relatively little danger. Fistulæ never result, and strictures, subsequent hoarseness, or severe cough, are quite rare. Death in the fatal cases is most often due to ulceration of the mucous membrane, and perforation, mediastinal abscess, pleurisy, pneumonia and pulmonary gangrene. In other causes exhaustion, probably the result of fasting due to painful deglutition preventing ingestion of food. In the fatal cases it is considered that death was probably the result of delayed surgical treatment rather than from the operation. A gentle attempt should be made to force soft food or smooth hard bodies into the stomach with a gum-elastic œsophageal bougie. Large pointed angular bodies which are liable to wound the wall of the alimentary canal are to be removed per orem with an umbrella probang; the same is true of long angular bodies. Small hard bones not especially sharp or angular are preferably removed through the mouth, but may be also displaced downwards. If the body cannot be dislodged, œsophagotomy should be performed, in connection with which the following facts are important. Inflammatory infiltration, cervical and peri-œsophageal, may occur two or three days after the body is swallowed, and ulceration, gangrene and perforation of the œsophagus on the fourth day. An impaction may, after a few days, cause swelling of the thyroid, by which an operation is made more difficult. Fasting from impeded deglutition rapidly weakens a patient, who, after a week, may reach a state of extreme exhaustion. The mortality is twelve per cent. less when performed within two days than when it is delayed to the third or fifth day, and Fischer has, therefore, concluded that an operation should be done at the end of forty-eight hours if bloodless manipulation is unsuccessful. If an attempt has been made to remove the body on the first day, the surgeon should wait twenty-four hours before making a second attempt, which should be the final one before operating. If a foreign body has been already impacted several days before an attempt has been made to dislodge it, bloodless methods should be at once followed by œsophagotomy. The surgeon should operate at once when the character of the impacted body renders an attempt to move it dangerous; for example an open clasp-knife. Tracheotomy should be at once performed when the foreign body is in the trachea. When a clean wound is made into a healthy œsophagus through uninfiltrated tissues it is desirable to close the œsophageal wound at once by suture, and drain the external wound under an antiseptic dressing. Perforation, gangrene or inflammatory infiltration of the surrounding soft parts contraindicate such treatment, and the wound should be treated unclosed. The use of an œsophageal tube for feeding is discouraged, for whether the œsophageal wound remains closed or open the patient can generally swallow small amounts a few hours after the operation.

THE TREATMENT OF AORTIC ANEURISM BY THE INTRODUCTION OF STEEL WIRE.

White and Gould [8] treated an aortic aneurism by introduction of thirty-two feet of steel wire; (Moore's method) the case ended fatally. They make the following deductions from the sixteen cases that have been treated by Moore's method: (1) Moore's treatment is worthy of careful trial in properly chosen cases; (2) the operation should be performed before there is reason to suspect rupture of the sac; (3) only a small quantity of wire should be introduced at any one time; (4) No firm pressure should be made over the aneurism afterwards.

A MODE OF FIXATION OF THE SCAPULA.

Mr. W. Arbuthnot Lane has a number of times

[6] Lancet, Jan. 21, 1888. Med. News.
[7] Deutsche Zeit. f. Chir., XXV, p. Hft. 6.
[8] Med. Chir. Trans., Vol. LXX, p. 277.

placed the profession under obligations to him in the elucidation of various obscure facts. Notably in regard to the mechanism and frequency of fractures of the first rib. Mr. Lane has carefully studied the relations existing between the coracoid process and the clavicle, when the arm is in an extreme degree of flexion.[9] He finds that when the arm is fully extended that the upper surface of the coracoid process is in contact with the under surface of the clavicle, and that frequently in a certain number of burden bearers that there is an eburnation of the bones at the point of impingement, and further that when the bones are in this position to one another that the scapula is practically fixed. The practical application of this fact is that, when a surgeon is obliged to break up adhesions in a joint, that this is the position the humerus should be placed in, and he states that when the humerus is in this position that the scapula is fixed and that the motions of rotation, complete adduction, and abduction may be performed.

A NEW METHOD OF REDUCTION OF DISLOCATIONS OF THE SHOULDER.

Abril [10] brings forward the following method for the reduction of dislocations of the shoulder.

In all the methods ordinarily employed for the reduction of dislocations downward of the humerus, the trunk is fixed and the head of the humerus is raised into the glenoid cavity. Dr. Abril inverts this proceeding; his plan is to fix the humerus and to make the glenoid cavity descend on to the head of the humerus. He claims for his method that it is most simple, easily and quickly done, that chloroform is not necessary to obtain muscular relaxation, that the pain is trifling, and that no assistants are required. He makes the patient stand with a crutch in his axilla; he then holds the hand of the affected side, making slight traction downward; the patient is now to let himself down as if he were going to fall on his knees, and as he falls the head of the humerus glides into its normal position, and the patient is surprised at finding himself cured.

AN ANALYSIS OF TWO HUNDRED AND SEVEN CASES OF MAMMARY CARCINOMA.

Gross [11] find that 82.47% were carcinomatous.

6	first	appeared	between	20	and	29	years	of age.
39	"	"	"	30	"	39	"	"
78	"	"	"	40	"	49	"	"
62	"	"	"	50	"	59	"	"
21	"	"	"	60	"	69	"	"
1	"	"	"	70	"	79	"	"

Children had been borne by 86.36%, and rather more than 90% of these had nursed their children. The patients' general health was excellent in 69.56%, indifferent in 17.39 %, and bad in only 13.04%. The disease was ascribed to traumatism in 9.66%, but the tumor developed within six months in less than half of these. In only two of those that nursed was it clear that the tumor had started from the induration. In 2.41% there was antecedent non-puerperal mastitis, and in four-fifths of these the disease started at the seat of crusts and scabs for several years before the appearance of the tumor. In 2.9% it began as Paget's disease of the nipples, or as a malignant papillary dermitis. In 4.83 per cent. it was inherited in direct line of descent.

The seat of election was the upper and outer portions of the gland and the immediate vicinity of the areola and nipple. In 80% of the cases pain of a sharp intermittent character was experienced; in about 15% there was merely a sense of discomfort, while in about 5% there was no discomfort whatever. The skin was involved in 74.87%, being met as early as two weeks and as late as twenty-nine months, averaging 12.6 months.

The opposite breast was infected in 3.86%, appearing on the average at 21.5 months. Infection of the axillary lymphatic glands was detected in 65.70%; the supra-clavicular in 7.20%; the sub-clavicular in 1.40%, and the cervical 1%.

This percentage is susceptible of increase, however, since in latter operations, where the axilla has been invariably cleaned out, these glands were affected in 95.35%.

Of the first 100 cases, 91.75 were marked by local reproduction, and he was unable to find a single recovery. In these cases the axilla was not cleared out. In the second series, 107 cases, he speaks with certainty of 53 cases, of which ten died without operation. Local reproduction occurred in 52.77% of the operations in the average in seven months.

The average life of the thirteen who died with recurrence was thirty-two months, varying from two to ninety-four months. The average period since the operation upon those who still survived without recurrence was three years and three months, varying from eight years and three months to six months.

A NEW METHOD OF FORMING A SPHINCTER AFTER GASTROSTOMY.

The following ingenious method is described by Girard [12] to avoid the leakage from the gastric opening which almost invariably occurs. Through a vertical incision (about fifteen centimetres long) the left rectus abdominis muscle is divided in the upper portion and in the median line. The peritoneal cavity is opened near the middle of the cut, and a wedge-shaped portion of the stomach near the fundus drawn out through the wound. A row of silk sutures which penetrate the post sheath of the rectus, the edge of the peritoneal wound and the stomach wall at the base of this protruding portion fix the stomach in the wound. An incision about ten cm. long and parallel to the operation wound is now made on either side of the latter, so that two strands of muscle fibre about the thickness of a finger are formed. These bands are now crossed laterally, and the stomach drawn out through the sphincter-like opening. The muscular bands and the gastric pouch are now fastened in place by sutures, after which the stomach is opened. Girard hopes in this way to obtain a sphincter controlled by muscular contraction, or by the tension of the rectus on the cicatrix should atrophy of muscular fibre result. The early death of Girard's patient from exhaustion not the result of the operation, prevents its inventor from making any statements in regard to its efficiency in guarding the opening of a gastric fistula.

RECTAL INSUFFLATION OF HYDROGEN GAS AS AN INFALLIBLE TEST IN THE DIAGNOSIS OF VISCERAL INJURY OF THE GASTRO-INTESTINAL CANAL IN PENETRATING WOUNDS OF THE ABDOMEN WITHOUT LAPAROTOMY.

This method, which was brought forward by N.

[9] B. M. J., May 19, 1888, p. 1047.
[10] Lond. Med. Rec., Dec. 15, 1887.
[11] Med. News, Nov. 26, 1887, Ann. Surg., June, 1888, p. 454.
[12] Wien. Med. Presse, 1888, No. 25, Bd. XXIX, 926.

Senn at the American Medical Association,[13] has already demonstrated its usefulness in two recorded cases; in Mackie's case [14] it certainly freed the surgeon from a large medico-legal question, in that it settled the diagnosis of a visceral injury in an assault with intent to kill. In the second case by Keen, and reported by Taylor, it was used to determine the seat, whether in the large or small intestine of a fæcal fistula;[15] this it accomplished.

Below are given Senn's conclusions:

1. The entire alimentary canal is permeable to rectal insufflation of air or gas.

2. Inflation of the entire alimentary canal from above downward, through a stomach tube, rarely succeeds, and should, therefore, be resorted to only in demonstrating the presence of a perforation or wound of the stomach, and for locating other lesions in the organ or its immediate vicinity.

3. The ileo-cæcal valve is rendered incompetent and permeable by rectal insufflation of air or gas under a pressure varying from one-fourth of a pound to two pounds.

4. Air or gas can be forced through the whole alimentary canal, from anus to mouth, under a pressure varying from one-third of a pound to two and a half pounds.

5. Rectal insufflation of air or gas, to be both safe and effective, must be done *very slowly and continuously.*

6. The safest and most effective rectal insufflator is a rubber balloon large enough to hold four gallons of air or gas.

7. Hydrogen gas should be preferred to atmospheric air or other gas for purposes of inflation in all cases where the procedure is indicated.

8. The resisting power of the intestinal wall is nearly the same throughout the entire length of the canal, and in a normal condition yields to a diastaltic force of from eight to twelve pounds. When rupture takes place, it either occurs as a longitudinal laceration of the peritoneum on the visceral surface of the bowel, or as multiple ruptures from within outward at the mesenteric attachment.

9. Hydrogen gas is devoid of toxic properties, non-irritating when brought in contact with living tissues, and is rapidly absorbed from the connective-tissue spaces and all of the large serous cavities.

10. The escape of air or gas through the ileo-cæcal valve from below upward is always attended by a blowing or gurgling sound heard most distinctly over the ileo-cæcal region, and by a sudden diminution of pressure.

11. The incompetency of the ileo-cæcal valve is caused by a lateral and longitudinal distension of the cæcum, which mechanically separates the margins of the valves.

12. In gunshot or punctured wounds of the gastro-intestinal canal, insufflation of hydrogen gas enables the surgeon to determine positively the existence of a visceral injury without the risks and medico-legal responsibilities incident to exploratory laparotomy.

CONTUSION OF THE ABDOMEN WITH RUPTURE OF THE INTESTINES.

B. Farquhar Curtis [16] arrives at the following conclusions on this subject:

"(1) The treatment of contusion of the abdomen should be purely expectant in the early stage, until symptoms of internal injury have appeared, or until the full extent of time in which they may be expected has passed. Exploratory laparotomy at this time is inadmissible. (2) When symptoms of uncontrollable internal hæmorrhage or serious visceral injury appear laparotomy is indicated; but when the diagnosis is uncertain the operation should always be begun as an exploration. (3) Great collapse is an absolute contraindication to all operative interference. (4) When rupture of the intestine is found, the best method of treatment is to secure the injured gut in the abdominal wound, and form an artificial anus. This can be easily relieved by a later operation when the patient has recovered his strength."

LAPAROTOMY FOR ACUTE INTESTINAL OBSTRUCTION.

An admirable analysis of all the reported cases since 1873, when the principles of antiseptics may be said to have first come into general use, is made by B. Farquhar Curtis.[17]

Table I shows a total of 328 cases, with 102 recoveries and 226 deaths, the percentage of mortality being 68.9%.

Table II shows clearly that the percentage of mortality is increased by delay. There are a number of other tables which give us various phases of the question.

The rival to laparotomy in acute intestinal obstruction is enterostomy, and the statistics of Treves give a mortality of 41 out of 61 cases, 67.2%. This is not much better than that for laparotomy, 68.4%.

"When the operative interference was limited to finding and removing the obstruction, without wounding the bowel, the mortality was only 56.4%, calculated on 186 cases; when it was necessary to establish an artificial anus after the obstruction had been relieved (owing to gangrene or rupture of the gut) the mortality rose to 66.6% in fifteen cases; and, finally, when an attempt was made to suture the wound in the intestine, whether it involved the entire circumference or not, the mortality reached the extreme point of 86.6% in 45 cases. Only 10% of the deaths in the last two classes of cases were from sepsis due to the operation, and not more than the usual number, 50%, were due to the condition of the patient, while 23% were due to the operation and to shock."

Finally, the author concludes as follows, that "a short, simple operation gives almost the only hope of success, and the earlier the operation is performed the shorter and simpler it may be made."

(To be continued.)

Clinical Memorandum.

A CASE OF TRICHINOSIS.

SERVICE OF A. M. SUMNER, M.D.
REPORTED BY W. L. BURRAGE, *House Physician.*

J. McA., thirty-seven years old and single, came to the City Hospital, February 6th last, suffering with what he thought to be rheumatism. He was a native of Maine, a carriage-builder by trade, and came from a boarding-house at the North End. At the time of

[13] Med. News, May 26, 1888, p. 569.
[14] Med. News, June 9, 1888, p. 628.
[15] Med. News, June 9, 1888, p. 629.
[16] Am. Jour. Med. Sciences, Oct., 1887.
[17] Ann. of Surg., May, 1888, p. 329.

entrance he gave a somewhat meagre account of himself. The following history is made up of his statements and of particulars gleaned from two women and a male friend, who took care of him just previous to his coming to the Hospital. Family history negative. Previous history: Fever and ague seventeen years ago, but no return of the trouble since; no venereal and no rheumatic history; a constant smoker and a hard drinker at times; was in the habit of going on a spree about twice a month, or whenever he happened to have a little money. Although a carriage-builder by trade, he could turn his hand to almost anything. The last work he did was leather-finishing in the town of Peabody, Mass., where he had been living with his sister for several months. He led a roving life, for the most part travelling about from one town to another, and living in cheap boarding-houses. Several years ago he went as far West as Minneapolis, but for the last two years had not been away from the vicinity of Boston. Most of this time he was in Peabody and Boston, the only exception being a short trip to Maine last Autumn.

Present history: Patient had been in poor health ever since he returned from the House of Correction, where he spent two or three months last summer, but had complained of nothing in particular. Four weeks previous to entrance began to have pain in left hip and knee, with some redness and swelling of those joints. About a week later had pain, that ran across abdomen into the back and over the region of the breasts, the pain daily increasing in severity.

Upon arriving at the boarding-house where he was cared for previous to coming to the Hospital, it was noted that he made use of a cane in walking. He was in poor flesh and looked sick; ate very little besides tea and toast, and could not sleep; said that he was suffering from pains that were all over him, but most intense in his lower back and abdomen. This was just two weeks before entrance. During the next two weeks he was confined to the bed most of the time; he moaned and cried out to such an extent, especially at night, that his friends were obliged to remove him to a more secluded house, where he would not disturb any one, and later to the Hospital, because he grew no better.

When he arrived at the Hospital he had a temperature of 101.3°, pulse of 85, and respiration of 18. The urine was pale, acid; specific gravity, 1040; urates much increased in amount; albumen and sugar absent; the average twenty-four hours' amount for the first week of his stay in the Hospital was thirty-five to fifty ounces.

Physical examination showed a well-developed, poorly-nourished man of about five feet ten inches in height. Heart: apex-beat seen and felt in fifth interspace inside nipple line; area of cardiac dulness bounded as follows: above, third rib; on right, one inch to right of median line; on left, one-half inch outside nipple line. A double murmur heard all over præcordia and in the first and second interspaces to the right of the sternum; systolic murmur heard best at apex, diastolic over second right interspace and upper sternum; both heard in axilla, systolic more plainly; neither in the back; systolic heard also in neck; pulmonic second sound accentuated; an arterial pulsation, seen at bend of elbow; pulse that of aortic regurgitation. Examination of the lungs and abdomen negative.

No œdema anywhere; some tenderness on pressure over right shoulder and left hip-joints; no redness or swelling. At entrance, patient was put on a treatment of salicylate of soda, grs. xii, every two hours, and this was continued until the 9th. Under date of the 9th, there is a note in the records to the effect that since entrance patient had suffered severely from sharp, lancinating pains, starting in back, and running through cardiac and epigastric regions; also from pains in the thighs and legs; unable to sleep at night because of the pain; profuse sweating; pain only partially relieved by opiates; extreme tenderness on lightest pressure over whole surface of body, most marked over lower costal cartilages and in the flanks.

On the 8th a sphygmographic tracing of the pulse was taken, showing the characteristics of aortic insufficiency. Morphia, hot fomentations, antipyrine, and nitro-glycerine all failed to control the pain, although at times he got a little sleep. Potassic iodide in five and ten grain doses, t. i. d., for four days had no appreciable effect. On the 16th, patient was put on four grains of quinine, t. i. d. On the 18th this was increased to four grains four times a day, and on the 20th to seven grains four times a day. On the 18th there was no material abatement of the pains in the epigastric region; the pains in the thighs and legs had disappeared. There was no redness, swelling, or especial tenderness of any of the joints. The temperature, which had been rising for the last two days, reached 102.8° that evening, the highest at any time during the disease.

From this point the records are as follows:

February 21st. Patient states that he has always been fond of pork; it is his favorite dish. He last ate it in the form of fried bacon about one week before his admission to the Hospital. It was purchased at a shop in Causeway Street in Boston. The note goes on to say: extreme tenderness on the lightest pressure over whole scalp, especially on the left side of the head; tongue dry, white-coated on the edges; pupils equal, react to light and accommodation; patient somewhat delirious at night.

February 24th. Microscopic examination of a portion of muscle removed from the supinator longus, right forearm, failed to reveal the presence of trichinæ. To-day, tongue heavily brown-coated, dry, and cracked. Patient complains of acute pain on the slightest movement of his body; has lost much flesh; gets out of bed often at night, and requires restraint with sheets; intellect moderately clear during the day; countenance wears an expression of great agony.

On the 22d quinine was omitted, and from this time the only treatment was whiskey and the Hospital solution of citrate of iron and quinine in sherry.

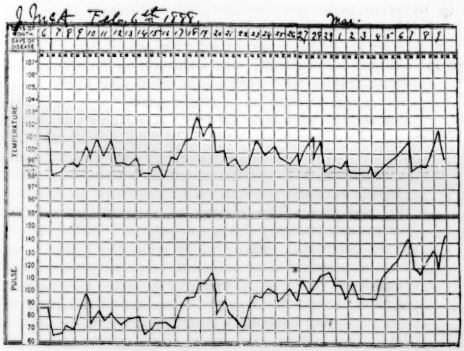
February 29th. A second examination of muscle, this time taken from the tensor vaginæ femoris, right thigh, failed to show trichinæ. (As there was no hook for the purpose, the muscle was procured in each instance by injecting a few minims of a four per cent. solution of cocaine subcutaneously and intramuscularly, and cutting down on the muscle. The operation caused no pain, the wounds were dressed antiseptically, and both healed by first intention.)

March 4th. General condition somewhat weaker daily; in a state of stupid delirium all the time; incontinence of urine and fæces. Patient continually rolls the bed-clothes into balls and throws them on the floor. Physical examination shows: pupils equal, re-

acting well to light and accommodation; cardiac murmurs as before; intensity of percussion resonance over both lungs in front somewhat diminished; in other respects, lungs negative. Abdomen negative; no paresis of muscles of extremities; tongue heavily coated; breath offensive; sordes on teeth and lips; universal tenderness on the lightest touch; much emaciation.

From this time till the 7th there was no change in his condition, except that he was not so bright mentally. When spoken to, his only answer was a moan. On the 8th he was manifestly weaker. He had become a living skeleton, cheeks hollow, limbs nothing but skin and bones. He lay in bed with knees drawn up, eyes rolling from side to side or half closed, muttering to himself while he rolled up the bed-clothes and threw them about.

This was his condition until the 9th, when he failed rapidly and died.



The bowels had been regular and the stools formed up to the 1st of March; after that there was considerable diarrhœa.

The patient took nourishment well, as a rule, though at times he would eat nothing for twenty-four hours. There was no vomiting. The urine, examined several times, was uniformly negative. The temperature and pulse are shown on the accompanying chart. No record of the respirations were kept, but they were at no time especially rapid or labored. Patient complained of pain on forced respiration; ordinary breathing was not painful.

Every effort was made to secure an autopsy, but without avail. After much persuasion, and just as the undertaker was removing the body, permission was obtained to take a piece of muscle. Accordingly, an incision was made over the seventh intercostal space on the right side, and a small portion of the intercostal muscle removed.

A few encapsulated trichinæ were found in this on microscopic examination. There were no calcareous deposits in the capsules.

— *Lawyer.* "Was the disease from which your husband died contagious?"

Witness. "No, sir; but it was awful ketchin'." — *Burlington Free Press.*

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

CHARLES HARRINGTON, M.D., ACTING SECRETARY.

Regular meeting, Monday evening, May 14th, at Medical Library, 19 Boylston Place. In absence of the regular Chairman, Dr. H. W. Williams was made Chairman, *pro tem.*

Dr. H. H. A. Beach reported

A CASE OF STRANGULATED HERNIA.

The strangulated hernia presented facts of unusual interest bearing upon the treatment of such cases complicated with undescended testicle. The patient was a young man who entered the Hospital with a history of a hernia, always reducible until forty-eight hours before his admittance. The day before entrance, taxis had been employed for four hours under ether unsuccessfully. When he reached the Hospital he was almost moribund. He was stimulated, etherized carefully, and a slight attempt made at taxis, to ascertain the condition of the sac and how much effusion it contained. It was found impossible to push the gut back, whereupon I made an incision into the largely distended sac, and found that it held a teacupful of bloody-colored serum; this having been evacuated, the finger could easily be carried into the ring and the intestine returned to the peritoneal cavity, there being no adhesions. The question naturally occurred: why had it been impossible to reduce the hernia before opening the sac? The reason was an undescended testicle, which was adherent to the sac on its inner side, the attachment or pedicle allowing the testicle to move easily inside and outside the ring. Of course, when there was a certain amount of fluid in the sac, the application of any pressure on the outside of the tumor would make the testicle, if it happened at that moment not to be in the hernial sac, act like a ball-valve, and so prevent the return of the distended gut. The moment that the sac was opened and the fluid evacuated the gut could be returned, and the testicle followed it easily. It is a condition that may occur in any hernia where the testicle is undescended, and teaches us that strangulated hernia complicated with undescended testicle *on the same side* is not to be subjected to prolonged taxis. An early exploratory incision is less dangerous. A few days after I saw a case with an undescended testicle on the opposite side from the hernia, the hernia being irreducible. No attempt was made at reduction, as there were no symptoms of strangulation.

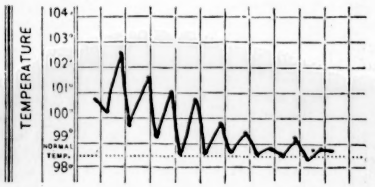
I have, also, to report

TWO CASES OF CARBUNCLE,

one in an elderly woman, and the other in an elderly man. The woman had already been so much prostrated by one carbuncle that it was desirable, if possible, to arrest the disease without the hæmorrhage and operative disturbance which naturally follows incision and scraping of carbuncles and removal of slough. With a solution of 1–2000 corrosive sublimate, I made subcutaneous injections into the border of the slough and inflamed tissue adjoining, and into

the mass of slough, with the idea of making an antiseptic wall *around* the area of sloughing tissue, to prevent the migration of micro-organisms into the healthy tissue, and to kill those within the wall.

There was a little sharp, stinging pain, and soon afterward a firm wall of lymph surrounded the slough. The carbuncle had existed five days and was spreading, but from the moment of injection the disease was arrested, and the slough separated rapidly with comparatively little pain. The second case is in the Hospital now. The diameter of the carbuncle was three and a half inches. It was treated in the same way, and is going on with an equally good result, and without anything else except the application of a cloth wet in a solution of sulpho-napthol and water, 1–50, applied afterward. The temperature has steadily diminished in both cases since the injection.



Of the different ways of treating carbuncles, I have seen a variety used by other physicians and surgeons, and have employed a number of them in my own private and hospital practice. I have never seen so immediate a response to treatment by any other method. So far as two cases go to prove it, simplicity, safety, and efficiency are its characteristics.

Mr. Rushton Parker, in a very interesting paper published in the *British Medical Journal* for March 31st, reports the successful injection of boils with corrosive sublimate and carbolic acid solutions, but, so far as I know, the plan of injecting the inflamed skin from the outside, so as to surround the slough, in addition to a thorough saturation of the latter with the antiseptic, has not been applied to carbuncles.

DR. FRANKLIN B. STEPHENSON said: This injection of carbolic acid in these cases reminds me that similar methods have been used to reduce adenitis in the form of bubo. I have tried it once with no success. I would like to ask the experience of those present in reference to such a method of treatment in the cases of bubo where there is apparently no specific cause, but only a strain or unusual exertion.

DR. R. H. FITZ presented a stomach from a patient of Dr. Beach. The case was one of

PERITONITIS FROM PERFORATING ULCER OF THE STOMACH.

It presents considerable interest with reference to the question of laparotomy for peritonitis. The patient entered the Hospital under the care of Dr. Abbott, and was for some time under his treatment for chronic ulcer of the stomach. The symptoms were sufficiently well marked to give but little doubt in reference to diagnosis, and after a certain length of time the patient, a woman, was relieved of the original symptoms of the ulcer. She recovered to such an extent that she was sent to the Convalescent Home. During her stay there an attack, apparently of follicular tonsillitis, occurred, from which she recovered in the course of a few days. She was able to go out and walk in the garden for two days, but on the third day, Wednesday, she was seized with a chill. This was followed, a few hours later, by pain in the hypogastrium, with elevation of temperature. The elevated temperature and the abdominal pain persisted; the latter became general. As the case was evidently one which required more active treatment than could be given at the Home, she returned to the Hospital. On the day of her return, Friday, there was no especial distension of the abdomen, but there was general abdominal tenderness and a marked elevation of temperature. On Saturday the same condition of things existed: the pain was worse, the constitutional disturbance greater, and she was then lying on the right side, with dulness in the right iliac region, the tenderness being greater on the left side than on the right. She was transferred, on Sunday, to Dr. Beach's care, with reference to relief by operation to the peritonitis. In the morning her condition was very much worse than the day before; her prostration was more extreme, the pulse being very weak, the abdominal distension considerable, with tympanitic resonance everywhere. There was a condition of stupor, partly attributable to the opium necessary to relieve the pain, but, at the same time, greater than the quantity of opium alone would explain. A consultation of several of the surgeons was held in the afternoon, at which some of the physicians were present, with reference to opening the abdomen. The history of the case indicated a peritonitis, probably from perforation. The question of the perforation taking place from the stomach or from the appendix, or caused by a pelvic process, was considered. A vaginal examination gave no evidence as to the existence of pelvic trouble, and the question essentially lay between a gastric ulcer and the appendix. The evidence in favor of a perforating gastric ulcer was to be found in the pre-existence of this disease, as indicated during her previous stay in the Hospital and the well-known likelihood of such a condition occurring in the history of this affection.

The possibility of a perforation of the appendix was to be found in the localization of the dulness, with the resistance, in the right iliac fossa, and the fact that the abdominal pain, according to her statement, started in the hypogastric region. It seemed probable, if the perforation occurred in the stomach, that the pain would have been, at the outset, in that region, with some sensation of tearing. Her condition, however, was so grave (she was evidently moribund at the time of the consultation) that a laparotomy was considered inexpedient, since this operation might be exploratory at the best, and, in case the appendix was not found to be the source of the trouble, a very extensive and prolonged operation would be required.

She died a few hours later, and the specimen shows the source of the peritonitis, which was fibrino-purulent. The inflammatory product was found in greatest abundance in the pelvis, and it is probable that the dulness found in the fossa on the preceding day was due to the gravitation of the liquid to that region. The stomach shows two ulcers, one on the anterior and the other on the posterior wall. The latter is the larger of the two, and has for its floor the pancreas. A perforation existed through the adhesions which united the stomach and pancreas, and this was prob-

ably the source of the peritonitis. In the anterior wall is a hole, now quite large, a quarter of an inch or more in diameter, and which is at the seat of the smaller ulceration. In the immediate vicinity of this hole the stomach-wall is thin, there is less mucous membrane, and there has existed an irritative process sufficiently prolonged to result in fibrous adhesions on the peritoneal surface. This rupture probably occurred during the examination.

The appearance presented by the stomach at once suggests that any operation would have been of very doubtful service, even had her general condition been more favorable; for the surgical treatment of this ulcer of the stomach would have demanded an incision through the wall of the stomach, that the posterior wall and upper surface might have been reached; and, even then, there was still another ulceration which might readily have been overlooked to be treated by incision and suture.

OVARIAN CYST.

Dr. H. H. A. Beach: I have an ovarian cyst here which Dr. Fitz was kind enough to say he would show; also two tumors of the breast, removed two weeks ago. The patient was fifty-nine years old, and was sent to the hospital by Dr. Gunter, of Charlestown. For two years after the cessation of menstruation the abdomen continued to swell, until at the time of entrance to the Hospital she measured forty-eight inches at the level of the umbilicus. There had been no disturbance from the swelling but frequent micturition. The legs and feet had been swollen but that symptom had disappeared after being confined to the bed for a short time. One wave of fluctuation could be felt throughout the abdomen and on this account a number of gentlemen who examined her considered the fluid ascitic, or ascitic complicated with ovarian disease. The unquestionable resonance of one flank determined me to give her the benefit of an exploratory incision, when the large amount of fluid was found in a single cyst, completely enveloping the multilocular and more solid portions of the growth. The amount of fluid was eighteen quarts, which together with the solid growth weighed thirty-eight pounds. The pedicle was very large and thick; it had the width and thickness of the open palm of a man's hand. It was easily treated by a clamp which I have invented and have used successfully in a number of cases. As you will see, it is made with the idea of compressing the pedicle by a broad surface, so that it becomes reduced to its toughest elements by squeezing away from the compressed surface the softer elements of the pedicle, there is after that no chance for a shrinkage of the pedicle following the application of the ligature and consequently no danger of hæmorrhage. The clamp is made of three separate parts joined by a pin that perforates each hinge — the jaws are closed by three separate screws—after the compression has been made, and the tumor removed, the severed end of the pedicle is thoroughly cooked with the actual cautery, the central pin is unfastened and the central section withdrawn, the pedicle is now seen compressed to one-fourth or less of its original thickness. A stout ligature is now passed by transfixing the pedicle twice and tying the knot temporarily, the outside section is then removed and the ligature thoroughly fastened, the thin section is removed and the ligature once more tightened and cut short, then dropped into the abdominal cavity. The patient made a recovery in nine days.

Dr. Fitz: The cyst is a multilocular cystoma, of the glandular variety, with chiefly colloid contents. The larger cavity contained watery fluid. This difference in the composition of the ovarian cystoma is not uncommon, the smallest cysts having often colloid contents, while the larger contains a thin material.

TUMOR OF THE BREAST.

Dr. Beach: The next case was a tumor of the breast, the patient aged sixty-five. The tumor was about the size of a fœtal head, with no axillary glands, and I report it on account of its being an interesting specimen of breast tumor, and as another instance of union by first intention, using the quill drainage-tube. It makes the sixth case that has healed by first intention successively. This one was the largest tumor of the series; three of them were cancers, with cancerous glands in the axilla which were removed. The skin, before doing anything in the way of operation, was scrubbed daily with corrosive solution and sulpho-naphthol, 1–50. Boiled silk ligatures were used. The usual antiseptic precautions were taken at the time of the operation, and it was afterward dressed with iodoform gauze, and covered with salicylic cotton. There was nothing unusual about the operation. There were no glands in the axilla in either case. As an instance of what can be done with quill drainage, I show here the size of the quills that can be found in the shops, This one is large enough to drain an ovarian cyst. It is a fact that they do not make so much trouble in the way of after-treatment of the wound as the rubber drainage-tube. They do not delay union and the tube opening closes more rapidly than the one left after a rubber tube.

Dr. Fitz: The anatomical interest of these specimens lies in the fact that they are rather an exceptional variety of tumor of the breast, and that they represent what the late Dr. J. B. S. Jackson frequently called attention to, and which is familiar to all of you, the occurrence of the same variety of rare tumors within a short period of time. The larger was removed two weeks ago, and is twice the size of the smaller. The tumor is apparently simply an enlargement of the breast, analogous to what has been repeatedly described as a chronic mammary hypertrophy. The appearance of the gland on section shows a homogenous gray and translucent appearance, with fissures, irregular, and very often Y-shaped. In the smaller of the two breasts it will be seen that the depressions are deep, with the lobules of the tumor projecting into them. This is the condition which gives evidence of the intra-canalicular growth of the tumor, so that the lobules, projecting, press upon the ducts of the glands, which become elongated, and not infrequently tortuous. The essential nature of the tumor, of course, depends upon the structure of the new-formed tissue which causes this dilatation of the gland ducts. In both cases the structure was essentially cellular, in one the cells being round and in the other rather spindle-shaped, and with comparatively little intercellular substance. They are, therefore, sarcomata presenting the intra-canalicular form of growth. The term sometimes applied to this growth is that of cysto-sarcoma.

Dr. James J. Putnam read a paper entitled

PERSONAL OBSERVATIONS ON MULTIPLE NEURITIS,

and gave a provisional report of a fatal case, probably

to be classed as of infectious origin, which he had seen in consultation with Dr. M. A. Morris, of Charlestown.

The histological examination was not yet fully complete, but sufficiently so to be of interest in this connection.

The patient was a healthy man in the prime of life, and the only exciting cause known was exposure dura rain-storm. The duration of the disease had been one week, death occurring from asphyxia, probably of pulmonary origin. The illness began with prickling in the hands and feet, weakness of the legs and arms, and an especially great impairment of the motion of the left arm at the shoulder. The paralysis spread steadily and became eventually almost universal, though nowhere absolute. There was moderate tenderness on deep pressure among the muscles of the legs and arms.

At the autopsy, which was performed by Dr. R. H. Fitz, the spleen was found enlarged, and the lungs studded with hæmorrhagic patches. The brain, spinal cord, and medulla were removed for further examination. Portions of the anterior crural and other lumbar nerves, the vagus, and the left axillary plexus were removed, and examined later, both in osmic acid and after hardening in Muller's fluid.

Changes similar to those described below were everywhere found, but much more markedly in certain parts of the brachial nerves than anywhere else. These changes consisted (1) in excessive swelling, or, on the other hand, atrophy and destruction of axis-cylinders, with a very variable amount of change in the myeline. In some primitive nerve-bundles scarcely an axis-cylinder was to be seen; (2) in evidences here and there of cell activity, affecting both the white cells of the blood and the endothelial and connective tissue cells of the nerve itself.

No hæmorrhages have as yet been found, and no large number of mastzellen such as Rosenheim found in his case.[1]

The pieces of the nerves removed were, however, unfortunately not very long, and the peripheral expansion was not examined except in the case of some of the diaphragmatic filaments of the phrenic, which were not much, if at all, diseased.

Parts of the left deltoid muscle were examined, with the result that the fibres as a rule were found healthy, while here and there there was one where the transverse striation had disappeared.

In seeking for the cause of the great swelling of the axis-cylinders on longitudinal and torn preparations, it had been found that as a rule these swellings were situated close to the annular constrictions of the nerve fibres. Sometimes the swelled axis-cylinder filled the entire space within the sheath, and vacuole formation had taken place in them, besides destruction of the myeline for a considerable distance. In short, the change seemed, on a large scale, identical with that described by Ranvier as occurring in nerves exposed to the action of water and other fluids.

The idea naturally suggests itself that poisons (like nutritive fluids) enter the nerve fibres in this way, eventually destroying them, and the speaker is engaged on a series of experiments to test the behavior of nerves, in this respect, when exposed to poisonous fluids surrounding them or injected into the blood-vessels.

[1] Arch. für Psych., etc., Vol. XVIII.

DR. FOLSOM: I have been exceedingly interested in this paper. I have little to say in addition to anything that Dr. Putnam has said. I find, on looking over the third service records at the City Hospital, there are at the present time fifteen cases of general neuritis in the wards. These fifteen cases occur in a total of between 240 and 256 patients — about six per cent. That is a very large proportion, but it has been known for many years that the City Hospital had a service for diseases of the nervous system, and such cases have been gravitating there.

The first case that I have to speak of is a woman of thirty-five, with universal neuritis of the arms, trunk, abdomen and legs. The disease appeared suddenly after exposure to wet, and was attended with the usual symptoms, marked loss of power, inability to walk well, excessive tenderness over the course of the peripheral nerves, etc. Thus far I have not been able to ascertain any special cause for this particular case, and I suppose it to be idiopathic. Of this case it should be said that there is a slight amount of dulness at the apex of the left lung, slightly increased voice, and prolonged expiration. Whether it is a beginning phthisis or not, and the neuritis belongs to that class, I am unable to say. There are no râles, and the patient's general condition is bad. The sputa have not been examined for bacilli.

My impression is that there are two groups of idiopathic cases, first those that come on in a slow way, as in subacute rheumatism, and, second, those which Strümpel speaks of as beginning with chill, fever, temperature of 102–103, typhoidal appearance, and slightly enlarged spleen.

The next case is of phthisis involving both lungs, with ulceration of the vocal cords. There are the characteristic symptoms as in the first case, excessive tenderness over the course of the nerve, etc., and also such extreme pain that the patient has to be kept under opiates.

There is also a case that is interesting from the point of view of differential diagnosis between peripheral neuritis and myelitis. My impression is that in alcoholic cases the spinal cord and peripheral nerves are both affected; and, of course, possibly in cases due to other causes. When I first saw this case the diagnosis was perfectly clear. It was a transverse lumbar myelitis, but I am told that when the case entered the hospital the symptoms were by no means clear, and there was a sense of numbness, of loss of power, a great deal of pain in the legs, and excessive tenderness over the trunks of the peripheral nerves.

It is a rather unusual symptom, I suppose, in transverse myelitis, and it seems to me that the only explanation is that the neuritis was only an accidental complication of the myelitis, or possibly due to the same cause. But the neuritis has not pursued a chronic course, the symptoms referable to that having chiefly disappeared, there is very little pain left, there is scarcely any tenderness, and although there is absolute loss of sensation there is very little atrophy of the legs, not the marked atrophy that you get in peripheral neuritis, but the condition which one gets in transverse lumbar myelitis.

There are four cases which I suppose to be purely rheumatic; whether more than the sheath of the nerves is involved I do not know. Two of them were young girls who came into the hospital for so-called rheumatism. It was found that they could walk only

with the very greatest difficulty. On examination there was very little appearance to account for it. There was very slight swelling of both feet, and a very slight red blush characteristic of rheumatism, but not enough to account for so great disability. There was excessive tenderness over the posterior tibial nerves, even a moderate pressure producing severe pain. Under the proper treatment for rheumatism, salicylates and alkaline, the pain and swelling disappeared, and also the pain on pressure over the nerves. The third case which I considered to be rheumatic was similar to the other two, except that the pain has recurred once after disappearing. The fourth case which I suppose to be rheumatic is a German, who came in with the ordinary symptoms of rheumatism. He spoke only German, and did not make the fact understood that, although he had acute rheumatism, what troubled him most was a feeling in his calves, as of pulling something apart. He had intense sensitiveness to pressure upon the posterior tibial nerve, and the same with some of the others.

There was one case of acute cerebro-spinal meningitis which is interesting in connection with the symptoms which were spoken of in a paper at one of the meetings a few weeks ago. It proved to be a typical case of cerebro-spinal meningitis, although the diagnosis for a while was in doubt between that and the tubercular form. The patient had not only extreme pain in flexing the thigh and extending the leg, but some pain on any movements of the leg, and while she was in the condition of extreme stupor it was a little difficult to entirely account for it; yet as soon as the intelligence in a degree returned it was found that this was due to peripheral neuritis, which, as Dr. Putnam says, is quite common in the various acute diseases of that type, typhoid fever particularly.

There are four cases of alcoholic origin. Two of them have enlarged livers. Whether it is hypertrophic cirrhosis or not I am not sure, but like the other cases that have lasted some time the knee-jerks are entirely gone in these two, and there are the usual disabilities, which I need not repeat.

These are in women. The other two cases are in men. One of them is just beginning to walk now, and and he has the characteristic gait of neuritis, which distinguishes it from locomotor ataxia.

I have seen cases which have been diagnosed as posterior spinal sclerosis, when the later history proved them to be peripheral neuritis without pain or tenderness as in this case. The patient drops his toes slightly when he walks. The fourth alcoholic case is rather interesting from the complication of a condition of extreme dementia which is sometimes confounded with the last stage of general paralysis of the insane. The history is very often obscure, and in this particular case there was no tenderness over the course of the nerves, unless the patient was moved, and he was too stupid to indicate whether he had any numbness or not. He came into the hospital in a state which reminds one of the terminal dementia which we see in the insane asylums, with quite marked emaciation of the legs, and, of course, inability to stand or walk. As I say, there was no pain at all in the legs, but the most exquisite pain on even slight pressure over the course of the nerves. These cases, although their mental state somewhat resembles the condition of terminal dementia from organic disease, are very easily differentiated from them by the mere expression of the face. One sees, in comparing them with a case of dementia from organic disease, that the muscles of expression have not absolutely lost their power, and that there is not that entirely vacant and staring expression which is shown so well in the composite photograph by Dr. Noyes which I showed to the Society some time ago.

The case of post-diphtheritic paralysis is interesting. This patient came into the hospital three days ago — a very marked case of the kind. There was an absolute loss of power in the hands and legs. He talks a little above a whisper, uses his hands incompletely, and walks very badly indeed. He has the characteristic numbness in the extremities, and all the other symptoms of the disease except pain. He has absolutely no pain whatever. The interesting feature in regard to the case, from the point of view of diagnosis, is that the sensory symptoms and the motor symptoms of the two legs are precisely alike except in one point, and that is in the left leg, the other symptoms being precisely like those in the right. There is very great tenderness on pressure over the nerve trunks. In the right leg, with the other symptoms identical, there is no tenderness whatever, illustrating the fact which Dr. Putnam speaks of, that cases do occur not only without pain, but also without undue sensitiveness on pressure over the nerve trunks.

Another case is rather an interesting one from the fact of the neuritis being unilateral, and associated with organic disease of the brain. This is a gentleman who has organic disease of the brain, the nature of which cannot be as yet determined, in the region of the fissure of Rolando on the right side, and marked loss of power in the left arm and left leg, not, however, amounting to absolute paralysis. He has complained of very severe pain in these limbs for several days, and it is found that there is a marked neuritis there. That is to say, pressure on any one of the nerve trunks causes very severe pain, the right side being entirely free. In these cases differing from the others, the knee-jerk is very much exaggerated, and that of course is due to descending degeneration of the motor tract.

There is another case which is somewhat like the one I have just reported, in the fact that I have not been able to discover anything throwing any light on the etiology. Very often, cases of peripheral neuritis in the Hospital are of syphilitic origin, but, unless this case of which I am about to speak is of syphilitic origin, I do not know to what cause to refer it. The patient is very much emaciated, the pain is very great, and the tenderness on pressure is extreme. He is able to walk, but with very great difficulty, and his gait simulates a little more the gait of posterior spinal sclerosis than ordinarily in cases of multiple neuritis. The power of the extensors is not entirely gone, and I find, on questioning him carefully, that he holds up his toes by very great effort, because the least motion causes such extreme pain. I have never seen a case precisely like this before in the very widespread distribution of the tenderness on pressure, which is universal in the legs. It is almost impossible to find a place where there is not some tenderness, but over the main trunk the sensitiveness is so much greater than elsewhere that I think there can be no doubt in regard to the character of the disease being neuritis. He is now taking a drachm and a half of the iodide of potassium a day, and will soon take double that amount,

and is improving. He denies any venereal antecedents.

I thought these cases might be of interest, although there are not represented all the various forms which occur, due to various causes, they show to what a variety of causes peripheral neuritis may be due, and the difficulty, in a great many cases, of establishing the etiology on a satisfactory basis. Dr. Putnam spoke of one case previously seen by me, in which the trouble was confined to the upper arms and shoulders, that he saw a number of years ago. I have since seen two cases precisely like that. The case that he referred to was a carpenter, who, in a cold November rain-storm, worked pretty much all the forenoon assisting in putting out a fire, getting thoroughly wet there, and remaining all the evening with his wet clothes on his shoulders, having changed all his other clothing. The second case was a man who got drunk and lay several hours with his shoulders exposed, and the third was somewhat similar. The subsequent history proved to be like that of the first. It seems to me that these cases show that the fact stated in the text-books, that the anterior poliomyelitis of adults differs from the anterior poliomyelitis in children in that the prognosis is much more favorable, is not true, and that it is probable that errors in diagnosis had been made, and that the cases were really cases of multiple neuritis, and got well, although supposed to be anterior poliomyelitis.

DR. S. G. WEBBER said: I have been very much interested by what Dr. Putnam has said, and the cases that Dr. Folsom has reported. I think we are gradually coming to recognize what an extensive disease neuritis is, how it comes in as a complication and as a distinct disease in so many cases which have previously been ascribed to other causes. It is so late, I will not multiply the number of cases reported. I will only say a few words in regard to the pathology in a case that I had at the City Hospital, where almost all the nerves were affected, and which I reported in 1884. I examined the nerves, preparing them with osmic acid. I think that for the examination of nerves this is especially valuable, inasmuch as the myeline is colored black, and each minute drop of myeline receives its color, so that the changes are made very evident and very clear. There were two classes of change which I found; I mean in the first stages of the change. As Dr. Putnam has drawn the constriction of Ranvier, one was near that, the primary change; the myeline beginning to divide into segments near this constriction, the first appearance of change being a separation into globules and a separation of the myeline away from the constriction, and the pushing of it away in much the manner as Dr. Putnam has intimated.

The other form was where the change had occurred around the nucleus in the centre of the cell. The first change in the myeline occurs near the nucleus, not at the constriction, the myeline being comparatively complete at the constriction of Ranvier, dividing up into an appearance as though it was becoming segmented near the nucleus. The disadvantage that I found in using osmic acid in preparations was that afterward the carmine did not discolor very clearly the axis-cylinder or the nucleus. The coloration was very faint, although they did take the carmine to a slight degree. The segmentation of the myeline goes on until the whole of this node is divided into small segments of larger and smaller size, and then it is absorbed, and we have, finally, simply a few drops of myeline scattered about in the sheath of the nerve, the axis-cylinder being lost and the sheath being also reduced in size. That is the extreme limit.

Soon after having seen these cases, I was interested in this matter of neuritis, and tried some experiments at the Medical School on rabbits and guinea-pigs, producing neuritis artificially. I had laid out an extensive plan of experiments, which I did not have time to carry out. I think that nearly every case of artificial neuritis, where the inflammation was evidently active, I found a change near the constriction of Ranvier, not in the centre of the cell of the nerve-fibre. It did not seem to be due altogether to the preparation of the nerve in osmic acid; it was more like what I have found in the beginning segmentation in myelitis. Possibly a few occurred, as in the second variety mentioned before, near the nucleus of the nerve-cell. At a distance from the point where I applied the irritation the nerves were very much degenerated. If the animal lived long enough and I got secondary changes, such as you get when the nerve is cut, these are secondary changes, the nerve-fibre being reduced, as in the case of disease, to a sheath filled with small particles of myeline.

DR. BULLARD: I would like to ask Dr. Putnam whether he has known of any case in which the auditory nerve is affected. I had a case in the Hospital a month or two ago, in which the man came in with very severe neuritis, with alcoholic and syphilitic history. The man was very low; he was in the Hospital for about six weeks. About two weeks before his death he was suddenly attacked with deafness, almost total, in both ears, and the ears were examined by Dr. Spear, who said that nothing could be found to account for the deafness. I am sorry to say that I believe they were not examined with the tuning-fork, and it seemed probable at the time that it might have been due to an affection of the nerves. I would like to ask that question.

DR. PUTNAM: I have never heard of such a thing, and I think it is an interesting suggestion.

DR. MORTON PRINCE: The hour is so late, Mr. President, that I will not take up the time with any extended remarks. I only wish to call attention to what may prove to be a very interesting fact. Though what I am going to speak of may be mere coincidence, it may throw some light on the etiology of multiple neuritis. I remember that in 1884, when Dr. Webber reported his cases, there was an unusually large number in the Hospital. Now it so happened that at the same time there was an epidemic, among the horses of this city, of a disease characterized by paralysis. I had a horse at the time affected, and was able to observe the disease. Now it happens again, this year, that there is a large number of cases of neuritis in the Hospital, and, again, there is a disease prevalent amongst the horses characterized by paralysis, and similar, so far as I have been able to observe, to the epidemic of 1884. The disease has each time been diagnosed by the veterinary surgeons as meningitis, but I have been unable to understand the grounds on which the diagnosis has been based. It seems to me, all things considered, that the disease is more likely a multiple neuritis, but it will require a *post-mortem* to establish the fact. If it should turn out to be so, considerable light may be thrown on the

etiology of multiple neuritis. I think Dr. Webber suggested to me, in 1884, that it might be this disease.

Dr. P. C. Knapp: I have not very much to say in regard to Dr. Putnam's very interesting paper. I was interested especially in the case that he reported of the woman who had the oculo-motor paralysis, because I was reading only a few days ago about a case, which seemed to be fairly well authenticated, of a neuritis which affected the different cranial nerves, one after the other, beginning with the third and fourth, I think, then having an optic neuritis, and then neuritis of the seventh, with typical facial paralysis. In my own experience with these cases of multiple neuritis I have not found the exaggeration of the knee-jerk, unless, as in the case which Dr. Folsom spoke of, which I saw with him this morning, there is also some other cause which might well explain the exaggeration. Of course, where the nerve going to the quadriceps extensor is not affected, there is no particular reason why the knee-jerk should be affected; but in the ordinary cases, where these nerves are involved, it seems to me that, unless there is some other fact that comes into play, the knee-jerk is either diminished or absent.

In regard to Dr. Prince's suggestion about the affection in horses, it seems to me hardly fair to consider the great prevalence of multiple neuritis now as an indication of its infectious origin, from the fact that there are so many causes, some alcoholic, some rheumatic, and others due to other infectious diseases or mineral poisons. It does not seem to me that, with so many different forms of neuritis, their frequency can fairly be attributed to one infectious cause.

Recent Literature.

A Text-Book on Surgery, General, Operative, and Mechanical. By John A. Wyeth, M.D., Professor of Surgery in the New York Polyclinic, Surgeon to Mount Sinai Hospital, etc. New York: D. Appleton & Co. 1887.

This text-book, comprising some seven hundred and twenty-five pages, profusely illustrated, is intended to present surgery as it exists to-day. In dealing with such a broad subject, the author has been obliged in many instances to omit what might well be deemed important subjects. For instance, neither pyæmia nor septicæmia are treated of in the volume; this, we suppose, is in part due to the practical obliteration of these affections by antisepticism, and then, again, by the imperative condensation, which has been admirably accomplished, in a work of this magnitude. This condensation has necessitated positive assertions on the part of the author, which would have otherwise been tempered by the experience of others. In a few instances we feel that the author's statements should be modified; for instance, ether is certainly not to-day recognized as *the* anæsthetic, to the practical exclusion of chloroform, for there still exists a large part of the profession who fail to recognize ether's superior advantages. The plates, many of which are colored, are worthy of especial mention. Dr. Wyeth has admirably succeeded in producing a hand-book for students and practitioners.

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SERVIA'S SANITARY SYSTEM.

In these times of effort toward a thorough, a rational supervision and control of matters affecting the public health, physicians and others may be interested to know the *schema, in re*, formulated by a very young member of the comity of nations.

An experienced economic observer and philosopher (De Laveleye) reports that, in Servia, the "general sanitary council" of seven doctors is a scientific consulting body for the State: its duty is to study and regulate measures adopted by the "sanitary department," whose functions are executive. The "sanitary department" is under the authority of a surgeon-general, with an inspector-in-chief, secretary, two chemists, and a veterinary: its sphere comprises everything relating to health, including even the food of the people: obligatory rules in regard to the diet of working-men are numerous and minute.

The national administrative *cadre* is paralleled by the medical. The *préfet*, or departmental governor, has the aid of a doctor, correspondent in grade, and nearly as well paid: the heads of districts and communes have, likewise, medical advisers, receiving the same salaries. Midwives and veterinaries are subordinated to this "department." In each town of importance the physician has a right to form part of the municipal council or board of aldermen.

The country is, therefore, as to hygiene, in the hands of medical men — a national board of health, with proper sub-officials — empowered to inspect and dispose all things concerning the physical well-being of mankind and of domestic animals.

We instance a few details by way of illustration: Every child must be vaccinated between the third and twelfth month; again when leaving the primary school; and once more when twenty-one years of age. This operation, free and compulsory, is performed from May 1st to September 30th, under superintendence of the *préfet* and departmental surgeon, in presence of the mayor. The proper medical officer must

inspect inhabited houses, and remove causes of illness arising from poor food and water, defective drainage, and from customs relating to births, burials, etc. Buildings where there are contagious diseases have descriptive labels affixed. (A similar rule is followed in Holland.)

In the care of public health, the government has not feared to make regulations forbidding a secular usage closely resembling a religious rite. Certain church followers had the habit of carrying their dead to the cemetery in an open coffin, the face and body covered with flowers: under the new *régime* a closed funeral case is requisite. The question of cremation — a safer mode for the oxidation of organic substance that must decay and may spread disease — appears less urgent for consideration there than in our own territory. Strict and detailed directions exist to stop the progress of infectious maladies, both on the frontier and throughout the kingdom.

Some of the so-called civilized nations have done much to improve the qualities of race in domestic animals — the lower animals, as sometimes called; whereas the procreation of nature's highest kind of life, whereon intellect has been grafted (or wherein it is developed), is left, for the most part, to unreasoning impulse — with results that every informed and thoughtful mind can but deplore. In this newly-formed European commonwealth, however, the function of the departmental doctor is to trace how marriages are made, if they produce hereditary affections, what is the average number of children to each union, and whether there are limiting causes. Under penalty of disciplinary punishment, the medical officer is to obtain from the *préfet* measures to abolish, in workshops and private houses, "everything that may injure health."

It is a subject for serious thought whether it be wise to place citizens under the tutelage implied by such an extensive officialism. Nevertheless, so complete a system, earnestly applied, would without doubt save from much pain and sorrow not only the average man, but also those who, in a sanitary and physiological point of view, ought never to have been born.

THE ASSOCIATION OF GENITO-URINARY SURGEONS.

THE union of several gentlemen from various parts of the country in an association devoted to the study of genito-urinary diseases seems to awaken the mirth of various medical periodicals, and lately the *London Lancet* has taken occasion to read the whole profession a little lecture because of the existence of this society. Doubtless it may seem to many at first thought, that this particular society is superfluous, and its field limited. A few sentences from the *Lancet* will show the animus of its remarks.

"The expression 'genito-urinary surgeons,' which does not seem to us a happy one, indicates the disposition to erect a new specialty which we trust will be reconsidered. . . . It is not a wholesome sign, this tendency for a group of men to fly off from the great body of their brethren and put a special label on themselves. Where is it to stop? Is syphiloma of the vulva to be regarded as something apart and special; or can it be separated without harm to the general conception of the case in which it occurs?"

In a succeeding number the *Lancet* again refers to the subject:

"Last week we directed the attention of our readers to an illustration of the portentous development of specialism in the title of an association soon to meet in Washington under the name of Genito-Urinary Surgeons. This group of gentlemen, including, we notice, some of the most honored names in the history of American medicine, have it is true, as we showed, with a delightful innocence, appropriated a somewhat large field for their special preserve, including diseases as widely apart as syphiloma of the vulva and interstitial nephritis. If the system of specialization is to go on unchecked, there will not be many more September Congresses at Washington before the Association of Genito-Urinary Surgeons will be broken into a hundred fragments, and we shall have yet more undignified uses of specialism," and it predicts the formation of other associations with "still more unsavory" names.

Now this JOURNAL is not inclined to differ from the *Lancet* in its apprehension of increasing specialties, and it is in no sense authorized to speak for the Society of Genito-Urinary Surgeons; but the views of the English journal seem superficial and one-sided, and deserve a word, perhaps not of justification, but of explanation, in behalf of the Society.

There are scattered through the different cities of the world a few medical men whose practice lies in great measure in diseases of the urinary organs, of whom Sir Henry Thompson may be regarded as a shining example; and in the United States such men exist in fair proportion, and they have earned the *Lancet's* contempt by associating themselves together for the study of the diseases in which they are specially interested.

Genito-urinary surgery has become a separate branch of instruction in many medical schools, because, to make instruction thorough, it is necessary to subdivide general surgery.

This Association includes many men who give instruction in genito-urinary diseases in these various medical schools: some of these gentlemen are also particularly interested in syphilis: some are well known as dermatologists; some would be willing to be called specialists; some would resent the name. Some of them might be said to be specially interested in diseases peculiar to the male sex; some of them are general surgeons; others still do a general practice. Their association is not for the purpose of establishing themselves as specialists, but for mutual study and information; or, in the words of their Constitution, "to promote the study of genito-urinary and venereal

diseases," it being expressly stated at the first meeting of the organization that the study of syphilis shall be included in its work.

Now, notwithstanding the sneers of the *Lancet*, that seems to many honorable men a perfectly legitimate field of study. Mutual acquaintance and discussion will not make these gentlemen less efficient as instructors, or less valuable to the community.

The name is a little misleading in that it fails to show the full scope of the Society. The *Lancet* appears to be imbued with the idea that because a syphiloma of the vulva is to be reported at its coming meetting, the Society is so constituted as to consider syphilis as appearing on the genital organs, and not elsewhere.

The *Lancet* can hardly have spoken with its best thought when it intimates that the name is "unsavory." The titled individual who refused to know Sir Astley Cooper because he would examine his rectum for a guinea might have despised men who would adapt the principles of optics to an inspection of the urinary reservoir, but it is a surprise to find such language in a journal which is devoted to the interests of the medical profession. The *Lancet* must occasionally blush as it reads its own pages. Progress is made by men who study comparatively small fields. Men who devote themselves to comparatively narrow limits, and so systematize and condense the knowledge of that field that it can be readily appropriated by others, help the advance of general medicine.

A MATTER OF DIAGNOSIS.

A suit of great interest to medical men has been brought in the courts of Rhode Island by a Mr. Larkin, proprietor of one of the hotels at Watch Hill, R. I., against Dr. Samuel O. Vanderpoel, of New York, for alleged damage to the plaintiff's business by reason of a diagnosis of scarlet fever made by the defendant in a case of a child staying at his hotel. Dr. Vanderpoel was called to see the child, diagnosticated a mild case of scarlet fever, and advised that the child be removed to a cottage belonging to the proprietor, so as to be isolated from the guests. This recommendation was not complied with, and the child's nurse continued to go to the servants' dining-room. The diagnosis becoming known, a general exodus of guests took place, and the house, which contained a great many families with children, was soon nearly deserted. The damage in the suit is laid at $12,000, though it is difficult to see on what grounds the case is to be urged. Dr. Vanderpoel's diagnosis, it is said, was confirmed by two other physicians, though it was disputed by one practitioner who saw the case in the interest of the landlord. The manner in which the notice was served upon the defendant was particularly aggravating, the sheriff declining, it is said, the bail that was offered, and expressing his intention to lock up the doctor. The exceedingly delicate position in which a physician is placed who is called to a case of infectious disease in a summer hotel is well illustrated in this case, but if a man is to be subject to a suit every time he makes such a diagnosis, it is time the profession knew it and protected itself. It is reported that Dr. Vanderpoel will bring a counter-suit against the hotel man for damages.

MEDICAL NOTES.

— Yellow fever has increased in Jacksonville, Florida, to a marked degree during the past week, the average of new cases daily being 50 or 60. The total up to 6 P. M., September 9th, was 604, deaths 73. Among those prostrated by the fever is Hon. H. A. Leugle, chairman of the committee on sanitation of the citizens' association, who has worked indefatigably since the outbreak of the fever. There remained in the city September 7th, 13,757 people — 3,945 whites and 9,812 blacks. Of these 10,375, mostly colored, are unwilling to leave, and 3,495 are without means. It is expected that 2,000 or 3,000 will leave in ten or twelve days. The complete depopulation of the city is impossible, and those without means can hardly be provided for in the refugee camps under a month or six weeks, during which time, it is feared, the epidemic will have done its work and hundreds of lives been sacrificed. The negroes are loth to leave, being told by politicians that they will lose their votes by a change of residence.

Ten cases of yellow fever are reported at McClenny in Baker Co., Fla., and one death from black vomit. Pensacola and Marianna have quarantined against the whole of Baker County. Montgomery, Ala., will follow their example.

Surgeon-General Hamilton, of Washington, at the suggestion of the President, has taken charge at Camp Perry in person, relieving Dr. Guiteras.

The officials of Jacksonville have made an urgent appeal for aid, which has been promptly responded to by some of the northern cities.

The Adams and Southern express companies have offered to transfer free of charge all supplies, money, contributions and flowers sent to the city for the benefit of yellow fever sufferers. Supplies should be addressed to Judge Loton M. Jones, chairman relief committee, and money to J. M. Shumacher, chairman finance committee. Quite a number of "Red Cross" nurses have arrived from New Orleans. No unacclimated person will hereafter be allowed to go into the city.

Despite the fact that there has been some suffering for lack of proper nursing, northern nurses are not specially desired, because they have not had the experience with the disease which is so desirable. It is said that there are plenty of capable, well-trained yellow fever nurses in Savannah, Charleston, Mobile, New Orleans, Galveston and other southern cities who are willing and anxious to do duty at the bedsides of the unfortunate people of Jacksonville.

— Hamons's disinfecting lotion for utero-vaginal injections is given by the *Monde Pharmaceutique* of June 5, "as it possesses characteristics of excellence which make it desirable as a summer toilet article:" Ac. salicyl and ac. thymic āā gm. 2; ol. ambra grisea, gtt. 20; ess. vanilla, gtt. 30; alcohol at 90° gm. 25; cologne water, gm. 50; aq. dest., gm. 300. It may be used from one to four times in 24 hours. — *Pharmaceutical Record.*

— A contemporary credits the following to W. S. Gilbert: A friend was bewailing in his company that his wife had just presented him with triplets, all girls. "What am I to do with them?" asked the poor man, "I don't even know what to name them." "Oh," said Mr. Gilbert, "call the first Kate, the second Duplicate, and the third Triplicate."

— A story comes from England which is not without its pathetic suggestion, especially to the medical man who has seen in elderly people the fear of mental decay and the suspiciousness with which they sometimes look for it in their contemporaries. The story was told by the late English portrait painter, Mr. Frank Holl, who, while painting the portrait of Mr. John Bright incidentally mentioned that he was about to perform the same operation for Mr. Gladstone. "It must be a very painful thing for you, Mr. Bright," he hazarded, "that after all these years you should have found cause to sever your connection?" "Indeed it is," responded Mr. Bright, with a sigh; "to think that, after we have trodden the same path together, shoulder to shoulder and hand in hand, we should be forced apart in the evening of our lives! And by what? By a bogey that has risen up within him and is beckoning him away from duty and sense — by a Frankenstein. Do you know, Mr. Holl, I seriously fear that my dear old friend's mind has really become radically undermined?" When he was at Hawarden painting Mr. Gladstone, the subject of the artist's portrait of Mr. Bright cropped up. "Ah!" said Mr. Gladstone with much interest, "and how did you find him?" "Fairly well, and he spoke very affectionately of you, Mr. Gladstone." "Did he, indeed?" replied the sitter, sorrowfully; "did he, indeed? That was a cruel blow. That after a lifetime of mutual esteem and of good work undertaken and carried through together, we should be divided on so clear a question. Tell me, Mr. Holl," — and here his mouth twitched, for he was evidently struggling with great emotion — "tell me, did you notice anything in the manner of my old friend which would lead you to believe that his reason was becoming in any way unhinged?"

NEW YORK.

— A large number of citizens and tax-payers of Jersey City were present September 6th at a meeting called by the Board of Works for the purpose of discussing the water-supply of the city. Mr. M. P. Merciles, representing the Fourth District Citizen's Association, urged the necessity of a new water-supply on the grounds that the present supply was both inadequate and impure, and contended that the city should keep the control of the supply. Drs. B. A. Watson and A. A. Lutkins also spoke in favor of a new source of supply. On the other hand a paper was produced in which sixty physicians of the city had certified that in all their practice, running back as far as forty years in the case of some of them, they had never been able to trace a case of illness to the city's water. The meeting finally adopted a resolution declaring that Jersey City should own and control its own water-supply, that it is against public policy to enter into any contract with any private corporation for a supply of water, and that a new supply is unnecessary.

— A death recently occurred in New York from chlorate of potassium. The victim was a laborer who worked in Central Park. Suffering from rheumatic pains, he sent his daughter to a druggists on First Avenue to procure some iodide of potassium for their relief. She either asked for "chlorate of potash" or the clerk so understood her, as he gave her the latter drug, and labelled the package to that effect. Without apparently examining the label, her father took half an ounce of the drug that evening, and the next morning another half ounce; and a few hours after the second dose he began to suffer from violent pains, which continued until death resulted.

— Dr. Benjamin Fradenburg, one of the oldest physicians in New York State, died at Palatin Bridge, at the age of ninety-one. He had practiced at Coeymans for over sixty years, and was well known all along the Hudson River.

Miscellany.

SULPHONAL.

THIS new hypnotic was discovered in its chemical relations by Bauman, and its action as a hypnotic by Professor Kast.

It is in colorless, tubular crystals, without odor or taste, melting at 130° to 131° C., and boiling at 300° C., beyond which temperature it decomposes. Medicinally, it has been found efficient as a hypnotic, giving quiet sleep, varying from five to eight hours, without producing any abnormal depression. The dose is about thirty grains, suspended in water, or given in wafer or capsule.

THE PHYSICS OF THE MALE URETHRA.

MR. W. W. WAGSTAFFE, in a paper in the St. Thomas Hospital reports, vol. xvi, noticed in the *London Medical Recorder*, July 20th, points out as the result of his observations that the urethra is rifled somewhat after the manner of a gun-barrel, but the spiral of the urethral tube which runs from right to left in about the upper three-fourths of its length usually becomes reversed near its distal extremity. The object of the spiral grooving in the case of the gun is to secure for the projectile a rotary motion and greater precision in direction of aim, and we may fairly assume that similar advantages of a physiological nature are gained for the outflow of the urine and semen by the arrangement of the urethral column. It is some-

times stated, he notes, that a twisted stream is one of the early signs of stricture, but this is misleading, since the normal outflow is always perceptibly spiral. This phenomenon is perhaps not altogether due to the urethral rifling. since it has been found that water forced out of a narrow, smooth-edged slit does not continue in a straight "tape" jet, but is shot out as a spiral.

TETANUS TRANSMITTED BY INOCULATION.

The Austrian correspondent of the *British Medical Journal* says that at a recent meeting of the Imperial Royal Society of Physicians, of Vienna, Dr. v. Eiselsberg gave an account of a case of tetanus, which had been in the clinic of Professor Billroth. A woman aged forty, drove a splinter of wood into the palm of her hand whilst scrubbing the floor. A fragment of the splinter was extracted by her husband. During the course of the next week, an abscess formed in the hand; this was opened by the attending physician. On the twelfth day after the injury, the woman was admitted into Professor Billroth's clinic with the typical symptoms of severe tetanus, which lasted four weeks. She afterwards recovered to a great extent, and was discharged at her own request. At that time she still presented slight contractions of the affected limb. Two months later, a suppurating fistula was formed, and a small splinter of wood came away in the discharge. The wound then completely healed, and the patient made a perfect recovery. Dr. v. Eiselsberg used the extracted piece of wood for preparing cultures. Two rabbits were inoculated with the culture thus obtained, one of which succumbed to tetanus on the sixth day after inoculation, while the second one, which was inoculated at a later date, showed marked symptoms of tetanus, such as increased irritability, trismus, pleuro-thotonus, etc. Dr. v. Eiselsberg showed this rabbit to the Society, and foretold that it would also die in a few days. The lecturer formally called attention to the fact the pathogenic bacillus of this disease was also to be found in the garden mould and the gravel. He will next report on a number of other experiments on the etiology of tetanus.

GROUPED CELLS IN ASCITIC FLUID AS DIAGNOSTIC OF MALIGNANT DISEASE OF THE PERITONÆUM.

Dr. H. C. Coe demonstrated at a recent session of the New York Clinical Society, as reported in the *New York Medical Journal*, the presence of the sprouting cell-groups of Foulis in a drop of ascitic fluid withdrawn the day previous from the abdomen of a patient with undoubted secondary cancer of the peritonæum, who had been under observation for some time at the Cancer Hospital. His attention had been directed to these cells by Dr. Welch seven years before, and since then he had sought for them in every specimen of ascitic fluid submitted to him. Although he had found them but once in cases of cancer of the liver, even where the omentum had been affected, he could recall several cases in which the presence of numerous cell-groups had led him to diagnosticate malignant disease of the ovaries and peritonæum, and in which diagnosis had been fully confirmed by a subsequent exploratory incision or autopsy. He thought that every pathologist who had given this question careful consideration must disagree with Tait, who, in the last edition of his work on "Diseases of the Ovaries," had said that he placed no reliance on the presence or absence of these cells in fluid removed by tapping. At the same time that author was correct in affirming that these elements were not always found. The speaker believed that, when they were found in the free fluid they denoted the presence of an exuberant malignant growth, either carcinoma or sarcoma; they might also indicate the outgrowth of papillomatous material through the wall of an ovarian cyst, with extension of the disease to the peritonæum. He had always deprecated a resort to exploratory incision in cases in which advanced malignant disease was strongly suspected, since, so far as his own observation extended, little additional information was gained, and the patient frequently either succumbed to the shock of the operation, or. if she recovered from it, grew rapidly worse. He thought that a careful examination of the fluid withdrawn with an aspirating needle would often render the diagnosis so clear that the patient would be spared such operative interference.

CAN THE FŒTUS *IN UTERO* BE INFECTED BY THE MOTHER?

The special Berlin correspondence of the *British Medical Journal* for July 14th contains an abstract of a paper by Prof. Max Wolff in Virchow's *Archiv* on the much-debated question whether micro-parasites can possibly pass out of the maternal into the fœtal blood through the placenta. He began his experiments with the anthrax bacillus and vaccine matter in pregnant animals. Wolff rejects mere clinical observations in such matters as uncertain, and liable to all kinds of fallacies. Only experiments in which one is able to infect the animal, either before or after conception has taken place, are of any value; by killing the mothers, one is able to interrupt the process at any time and to examine the fœtus *in utero*, so that there can be no doubt about an exact bacteriological proof of inheritance. According to former opinions (Bruell, 1858; Davaine, 1867; Bollinger and Koch, 1875), the anthrax bacilli are never transmitted from the mother to the fœtus. But, according to more recent work done in Pasteur's laboratory (Koubassoff, Straus, Chamberland), micro-organisms may very easily pass through the placenta into the fœtus. Wolff has worked out this question experimentally with the most minute and laborious precautions, using in every case the three branches of the bacteriological method; namely, microscopic examination of organs, cultivation of bacteria, and inoculation. The result of the first method was entirely negative in 29 animals. Of 156 cultures, 150 remained sterile, while six gave a positive result. Of 29 animals inoculated, 26 remained well. Where anthrax was found in the fœtus, two of these methods always gave results, and only one in favor of infection of the fœtus by the maternal blood. For this reason, Wolff concludes that the separating wall of the placenta is not pervious by the anthrax bacillus, and attributes to defects in the technical process the few cases which occur to prove the contrary. Of course, he does not deny that it is possible for bacilli to migrate through the placenta into the fœtus, but only under pathological conditions, in cases of hæmorrhage in the placenta, fœtal inflammations, convulsions, etc. Wolff also

maintains that the vaccine contagium cannot pass through the placenta. Of twenty pregnant women, twelve were vaccinated with success, and their seventeen children were vaccinated on the first to the sixth day after birth. In every case well-defined pustules appeared, showing that the children were not in a state of immunity. It is now fully ascertained that the children, while yet in their mother's womb, may contract genuine variola if their mother suffers from small-pox during pregnancy. Wolff, in admitting this fact, points out its rare occurrence, and explains it by the tendency to hæmorrhage so frequent in patients suffering from small-pox; in such pathological conditions, as has been said above, the blood may pass from the mother to the fœtus through the placenta.

A CASE OF PERFORATING WOUND OF THE ABDOMEN INFLICTED BY AN OX'S HORN.

The *London Medical Recorder*, July 20, contains the report of a remarkable case of abdominal injury reported by Dr. Nikolar S. Gratch in a Russian medical journal (Med. Obozr, No. 2, 1888).

The case was of a weak and emaciated peasant woman, aged fifty-five, who, when waiting on a village road for a herd returning home, was suddenly attacked by an ox, which threw her up in the air, caught her on one of his horns, and then tossed her about on the road for several moments before aid could arrive. The woman got up by herself, and was even able to walk home, "feeling all the way that something warm and moist was dangling between her thighs," but, on reaching her staircase, she became so faint that it was found necessary to carry her up and to send at once for a clergyman and for the writer. When seen by the latter, seven hours later, the woman lay on a dirty palliasse on the dirty floor of her hut. She was in a state of collapse, had a weak, uncountable pulse, pinched face, and scarcely audible voice, and complained of epigastric pain. Her chemise having been divided with scissors, a "large mass of distended, partially quite dry, intestinal loops presented itself, covered with another soiled and blood-spotted chemise." The prolapsed mass being pushed aside, an extensive triangular flap consisting of the abdominal integuments alone was found, with its apex about two centimètres from the pubes, while its sides ascended from this point obliquely across the inguinal regions to terminate somewhere on the line dividing them from the corresponding infra-umbilical lines. The abdominal wall was perforated through all its thickness, only about the left angle of the triangle. There were, besides, some superficial bruises about the thighs. Having administered twenty-five drops of simple tincture of opium (Ph. Russ.) in two doses, Dr. Gratch washed out the protruded mass (which seemingly included a portion of colon) with a tepid solution of corrosive sublimate (1 to 5,000), then carefully examined the parts in regard to their integrity, and returned them, without any special trouble, into the abdominal cavity, closing the perforation with several superficial and deep sutures, and applying an iodoform dressing. The after-treatment consisted only in the internal use of the opium tincture (five drops four times a day), cold milk diet, and strict rest in a supine position. Recovery proceeded so satisfactorily that on the fourth day she could be safely removed to the town hospital. The temperature never rose above 38° C., and became normal on the seventh day, about which time also regular action of the bowels was established. On the eleventh day all sutures were removed. When seen about six weeks after the accident the patient was quite well, but was obliged to wear a supporting abdominal bandage since, otherwise "she felt some peculiar weight in the hypogastric region when walking." Dr. Gratch is not very sure whether his patient's recovery from her severe injuries could be attributed solely to the antiseptic precautions adopted, since the woman's surroundings up to her removal to the infirmary were quite the reverse of hygienic, and all his cleansing and disinfecting manipulations could only be carried out on a dirty floor and in semi-darkness, contributed by a dwarf petroleum lamp and a tallow candle. In common with other Russian country practitioners, Dr. Gratch thinks, generally, that "rustic dirt is not so dangerous as the doubtful cleanliness of infirmaries," and that hence "bad hygienic conditions of villages must not be regarded by the surgeon as an obstacle to surgical operations."

A VISIT TO THE CLINIQUE OF DR. APOSTOLI, OF PARIS.

We make the following extract from a Paris letter from W. Macfie Campbell, M.D., to the *Medical Press*, describing the technique of Dr. Apostoli in the electrical treatment of fibroids.

We will now suppose that an old case of fibroid is on the table. The case-book shows that she has had the galvanic puncture five or six times, and under treatment perhaps six months. The menorrhagia is quite under control, she is still blanched-looking, but bright, and says she is now able, and has been since the first month for her usual work as charwoman. Only the galvano caustic is to be used to-day. She is placed on her back with the thighs separated, the surgeon himself irrigates the vagina with 1-1000 sublimate solution, passes the sound, which has been burnt over a spirit lamp, then dipped into the sublimate solution, and anointed with carbolic vaseline. The clay electrode is placed over the abdomen, any abrasion of skin being covered with a piece of moistened paper, and the connection made. The current (probably negative) is generally increased to 20, 30, 70, 150, or even 200 milliampères, according to the former toleration of the patient and her present capability of bearing increase. The current is continued for five to eight minutes, and is sometimes accompanied by hæmorrhage, then the vagina is again irrigated, and a tampon of iodoform lint is inserted through a speculum (this for two reasons — as an antiseptic dressing, and as a preventive for coition), and the patient is sent to her seat for an hour or two. They walk or drive home, sometimes long distances, and are able for their work next day.

With our next case puncture is to be employed — the same irrigation is carried out — and Dr. Apostoli (after washing his hands carefully in the mercurial solution) makes a bimanual examination, and determines the place of his puncture, choosing the cul-de-sac or the posterior lateral aspect of the tumor, fixing his finger on the chosen spot (which must not be near any pulsating area) he passes the loose canula along his finger to the place, then having determined the depth

of his puncture by the trocar's movable handle, he presses it on, making a puncture of one-third to three-quarters of an inch in depth. A shorter period and fewer milliampères are employed, and the pain is evidently greater. In his private practice chloroform is sometimes needed. The case is then irrigated and dressed as before, and told to appear in two days. Thereafter, until the slough separates, a matter of eight days, she is instructed to use hot water sublimate irrigation (1–2000 to 1–3000) four or six times daily. This case may require one puncture a month for several months with the galvanic caustic between, but the patient, with two days' rest after the puncture, is able for all her work, and seems more than content to go on with her treatment.

For chronic endometritis and active hæmorrhage the positive pole is used, and the electrode carried to all parts of the cavity, so as to act upon the entire uterine mucous membrane.

For acute endometritis, peri- and parametritis, a long previous course of irrigation with hot water is enjoined, and no operative interference is attempted until pain to the touch is gone, or the sound can be passed almost painlessly.

For acute para- and perimetritis nothing is done while pain and tenderness remain, but when the painless or chronic stage is reached, the puncture is made into the most accessible part of the hyperplastic exudation, and the treatment carried out as before. A case like this may need ten punctures, and the galvano-caustic simple has but little effect upon it.

Dr. Apostoli's apparatus consists of a Leclanché or bisulphate of mercury battery of thirty-six cells of a rheophore of clay for the abdomen, of sounds of platinum for the galvano caustic, of trocars of steel for the puncture, with their canulas, and of the bi-polar insulated sound for use with the interrupted coil machine. In his private house he also provides what he calls an electric bath of static electricity, by a large friction machine worked by an air engine. This apparatus is capable of giving a spark of six inches, and not worked at its full strength, is used in directing the fluid to any required portion of the patient's body, being provided with suitable conductors. I saw myself, with this machine, a spark of one and one-half inches drawn from a woman's arm without the appearance of much pain, while the current formed was strong enough to make the bystanders' hair stand on end literally at a distance of one or two feet.

The distinguished feature of Dr. Apostoli's machinery is the galvanometer by which he is enabled to measure the strength of his constant current up to 200–300 milliampères, and the strong point of his conduct of a case is his strict attention to antiseptic details. In no case did I notice the smallest departure from the rules he has laid down for the strictest antiseptic cleanliness of his instruments and hands, a cleanliness which he insisted upon also in his visitors.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 1, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	839	434	33.36	13.56	20.04	1.80	4.65
Philadelphia	1,016,758	454	196	26.40	9.68	11.88	.44	1.98
Brooklyn	751,432	353	192	27.72	12.04	19.88	.56	1.68
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	180	96	29.70	9.35	18.15	2.75	3.85
Boston	407,024	217	96	34.04	8.74	24.84	3.22	3.22
Cincinnati	325,000	105	—	17.10	9.52	8.55	1.90	5.70
New Orleans	248,000	103	36	33.95	12.61	6.79	—	12.61
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	—	—	—	—	—	—	—
Pittsburgh	210,000	97	53	40.17	4.12	23.69	8.23	2.06
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	14	7	21.42	14.28	21.42	—	—
Charleston	60,145	37	19	29.70	8.10	24.30	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	76,328	29	16	41.40	10.35	41.40	—	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	34	24	64.68	2.94	52.92	8.82	2.94
Fall River	61,203	35	22	42.90	8.16	37.48	—	—
Lynn	51,467	24	—	12.48	—	12.48	—	—
Lawrence	40,175	15	9	39.99	26.66	33.33	6.66	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	22	17	50.00	4.54	50.00	—	—
Somerville	33,307	18	—	11.11	5.55	11.11	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	17	—	23.52	—	23.52	—	—
Chelsea	27,552	—	—	—	—	—	—	—
Haverhill	24,979	8	4	12.50	12.50	—	12.50	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	—	—	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	13	4	7.69	7.69	—	—	—
Malden	18,932	13	5	38.45	7.69	30.76	7.69	—
Fitchburg	17,534	13	7	53.83	—	53.83	—	7.69
Waltham	16,651	9	6	77.77	—	77.77	—	—
Newburyport	13,839	7	3	28.56	14.28	14.28	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2,656: under five years of age 1,246; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 827, consumption 283, acute lung diseases 139, diarrhœal diseases 517, diphtheria and croup 90, typhoid fever 86, whooping-cough 38, scarlet fever 34, malarial fever 36, measles 19, cerebro-spinal meningitis three, erysipelas two, small-pox two. From whooping-cough, New York 17, Brooklyn six, Philadelphia four, Baltimore, Boston and Pittsburgh three each, Cincinnati and New Orleans one each. From malarial fevers, New Orleans 14, Brooklyn six, New York and Baltimore five each, Philadelphia three, Charleston two, Boston one. From scarlet fever, New York 25, Brooklyn four, Philadelphia and Pittsburgh two each, Fall River one. From measles, New York 16, Brooklyn, Pittsburgh and Fall River one each. From cerebro-spinal meningitis, New York, Philadelphia and Baltimore one each. From erysipelas, Boston two. From small-pox, New York and Philadelphia one each.

The meteorological record for the week ending September 1, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Week ending Saturday, Sept. 1, 1888.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	7.00 A. M.		3.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday,...26	29.94	72.0	88.0	65.0	72.0	64.0	68.0	W.		S.W.	12		18	F.		C.		
Monday,..27	29.87	70.0	83.0	65.0	70.0	61.0	66.0	W.		N.	13		13	F.		O.		
Tuesday,..28	29.94	60.0	66.0	54.0	60.0	61.0	60.0	W.		N.	15		6	C.		C.		
Wednes,..29	29.90	65.0	75.0	54.0	57.0	54.0	56.0	W.		W.	14		12	C.		C.		
Thursday, 30	29.93	70.0	83.0	53.0	63.0	75.0	69.0	W.		W.	12		14	C.		C.		
Friday, ...31	29.98	77.0	86.0	64.0	77.0	79.0	78 0	W.		S.	14		10	C.		C.		
Saturday,. 1	29.82	70.0	78.0	67.0	95.0	88.0	92.0	S.		S.E.	12		4	O.		C.		
Mean, the Week.	29.91	68.1	77.0	60.0			70.00											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FROM SEPTEMBER 1, 1888, TO SEPTEMBER 7, 1888

WORTHINGTON, J. C., captain and assistant surgeon. Ordered from Fort Crawford, Colo., to Fort Townsend, W. T. S. O. 206, A. G. O., September 5, 1888.

HALL, J. D., captain and assistant surgeon. Ordered from Fort Townsend, W. T., to Fort Niagara, N. Y. S. O. 206, A. G. O., September 5, 1888.

BROWN, P. R., captain and assistant surgeon. Ordered from Fort Niagara, N. Y., to Fort Sidney, Neb. S. O. 206, A. G. O., September 5, 1888.

ALLEN, CHARLES H., major and surgeon, STERNBERG, GEORGE M., major and surgeon; MCELDERY, HENRY, major and surgeon; and CARTER, EDWARD C., captain and assistant surgeon, are a board of medical officers which is constituted to meet in New York City on October 1, 1888, or as soon thereafter as practicable, for the examination of assistant surgeons for promotion, and of candidates for admission to the medical corps of the Army. S. O. 203, A. G. O., September 1, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING SEPTEMBER 10, 1888.

PURVIANCE, GEORGE, surgeon. To proceed to Fairport, O., as inspector. August 27, 1888.

MURRAY, R. D., surgeon. To proceed to Key West, Fla. September 5, 1888.

HUTTON, W. H. H., surgeon. To take temporary command of Camp Perry, Fla. September 8, 1888.

GUITERAS, JOHN, passed assistant surgeon. To proceed to Jacksonville, Fla., after return, from duty, on special train from Jacksonville to Hendersonville, N. C. September 8, 1888.

WASDIN, EUGENE, passed assistant surgeon. To rejoin his station at Mobile, Ala. September 5, 1888.

BRATTON, W. D., passed assistant surgeon. To proceed to San Francisco, Cal., and report to surgeon H. W. Sawtelle, for duty. September 8, 1888.

MAGRUDER, G. M., assistant surgeon. To proceed to Mobile, Ala., and assume temporary charge of the Service. August 31, 1888.

FATTIC, J. B., assistant surgeon. To proceed to Memphis, Tenn., and relieve passed assistant surgeon C. T. Peckham. August 31, 1888.

MAGRUDER, G. M., assistant surgeon. To proceed to Way Cross, Ga. September 6, 1888.

DEATH.

Died in Lowell, Mass., September 9, 1888, John Cochrane, M.D., M.M.S.S., aged forty years.

BOOKS AND PAMPHLETS RECEIVED.

Annual Announcement of the New York Polyclinic and Hospital. A Clinical School for Graduates in Medicine and Surgery. Session of 1888–89.

Obstetrical Antisepsis. By Dr. Auvard, editor of "Archives de Tocologie," Accoucheur des Hôpitaux, Paris. Reprint. 1888.

Transactions of the Medical Association of the State of Missouri, at its Thirty-first Annual Session, held at Kansas City, Mo., April 17, 1888.

Réfutation des Recherches sur la Fièvre Jaune faites par Mr. P. Gibier à la Havane, par le Dr. Domingos Freire, Professeur de chimie organique et biologique à la Faculté de Médecine de Rio Janeiro, etc. 1888.

Excessive Venery, Masturbation and Continence; the Etiology, Pathology and Treatment of the Diseases resulting from Venereal Excesses, Masturbation and Continence. By Joseph W. Howe, M.D., author of "Emergencies" etc. N. Y. E. B. Treat. 1888.

Addresses.

ON MEDICAL MUSEUMS, WITH SPECIAL REFERENCE TO THE ARMY MEDICAL MUSEUM AT WASHINGTON.[1]

BY JOHN S. BILLINGS, M.D., *Surgeon, United States Army.*

GENTLEMEN of the Congress: Our articles of confederation require that the President shall give an address. In endeavoring to comply with this regulation, I must ask your indulgence, for, while I think I have something to say, I cannot give you such a discourse as would befit the audience, the occasion, and the subject.

The prominent characteristic of the great majority of the societies composing this Congress is that their members have, as a rule, been chosen because they have either made some valuable contributions to medical literature, or have, in some way, rendered aid to the profession; in other words, they are supposed to be men whose labor and thought have not been confined to their own interests, or to those of their own patients. It may, therefore, be assumed that you are all interested in medical science, not merely as a means of giving new modes of diagnosis or of treatment, but also for its own sake, for the sake of knowing, for the pleasure of investigation, and in the hope of helping others, and that, while the majority have devoted themselves more or less to special branches, they have not, in so doing, lost interest in what may be for the general good of the whole profession.

I am here as the representative of the medical departments of the general government, which has need of the best knowledge of all the specialties, and is beginning, in its turn, to do something for each.

The physicians in the government service are all general practitioners, and are expected to have such an education and training as will fit them to deal, alone and without consultation, with the diseases and injuries to which men, women, and children are liable. You have been, and still are, their teachers — in the lecture-room and the hospital before they entered the service — in your text-books, monographs, and contributions to journals or transactions which follow them to their widely scattered posts of duty. They are your warm friends; the more you discover, the greater your skill, the more recognition which your work receives, the better they are pleased.

Within the last twenty-five years the general government has, in its turn, done something for medicine and for you by founding and maintaining a medical library and museum in Washington under the direction of the Medical Department of the Army.

I have had occasion several times to call attention to the library, which, no doubt, is that part most immediately useful to physicians, and which has attracted most attention. To-night I propose to speak of the other branch, in whose proper development it is desirable that you should take an intelligent interest, and, after giving a brief sketch of the development of modern medical museums, we will consider more especially our own national medical collection as it is and as it ought to be.[2]

The origin of collections of objects of natural history was possibly, as suggested by Beekman, the custom of keeping curious objects in temples; but we have no record of the formation of any collections specially connected with anatomy or medicine before the sixteenth century. It is true that human anatomy had been introduced in the schools by Mundius in 1306, and that, no doubt, in Bologna, in Paris, and a few other places, a skeleton or two was preserved for purposes of instruction; but alcohol was unknown as a preservative before the end of the fifteenth century, anatomical details were of no interest until Vesalius had stirred up controversy with the Galenists, and injected preparations were not thought of until after Harvey's announcement, in 1628, of the discovery of the circulation of the blood.[3]

The introduction of the use of the microscope at the beginning of the seventeenth century, and the collections of preparations for use with this instrument made by Leeuwenhoek and Ruysch, gave a powerful stimulus to formation of museums of this kind. The most famous of these collections was that of Ruysch, purchased in 1717 by Peter the Great, and sent to St. Petersburg. Ruysch was practically the first to prepare injected anatomical specimens for permanent preservation, and, if the stories told of his work are true, he made preparations which have never been surpassed. His museum was a very ornamental one, the bones and skeletons being arranged in various devices, the plants in bouquets, while scattered through the whole were beautifully engrossed sentences from the Latin poets.

The most famous medical museum in the latter half of the eighteenth century was that founded by Fontana at Florence. This still exists, filling a series of rooms, and consists mainly of wax preparations, beautiful to look at, but inaccurate and of little scientific value.[4]

During the first half of the present century a number of private collections were formed by anatomists, pathologists, and surgeons. Most of these have become public collections, either by gift or purchase, and the rest have been dispersed or destroyed. There is not in existence at the present time any large collection of specimens pertaining to human pathology which is the property of an individual and is at all comparable to those made by John or William Hunter, Astley Cooper, Howship, Liston, or others, unless it

[1] The President's Address, delivered September 20, 1888, before the Congress of American Physicians and Surgeons, Washington, D. C.

[2] As a "museum," in the original sense of the word, is a building or place in which are collected objects of interest to the muses — that is, objects of art, literature, etc. — the phrases "medical museum," "museum of pathology," etc., would have seemed quite improper in the days of Hippocrates, just as the prevailing pronunciation of the word múseum grates on the ears of the elders accustomed to the strictly proper way; that is, museum. Custom has, however, so strongly sanctioned the use of the word museum in the sense of a collection of different articles, that it would be folly to attempt to give it a more limited signification, and, though lexicographers still recognize only the word as accented on the penultimate syllable, the tendency to accent the first syllable is so strong and constant that it is safe to predict that múseum will, in popular usage in this country, ultimately win the day.

[3] For accounts of the collections formed between the days of King Solomon and the end of the seventeenth century, consult tome ii of the Musei Museorum of Michael Bernard Valentin, in folio, published in Franckfort in 1714, wherein are curious engravings of many of the wonders contained in these museums. See, also, Hagen (H. A.), "The History of the Origin and Development of Museums." American Naturalist, 1876, x, p. 80.

[4] The first use of wax models to represent pathological specimens or dissected preparations of parts of the human body is attributed to a Sicilian priest, Gaetan Jules Zambo, who lived in the latter part of the seventeenth century, and who had been accustomed to make wax models of diseased or deformed hands, feet, etc., to be used as *ex voto* offerings at the shrines of certain saints. The fame of these induced a Florentine surgeon, Ricci, to visit the priest and to get him to model some pathological specimens which he furnished. A Franciscan, named Desrones, brought this art to France, and made many such models between the years 1703-1706, and Bianchi formed a large collection of the same kind in Italy. It was scattered after his death, and the last vestiges of it were two models representing a healthy and diseased liver, which were to be seen in Innspruck in 1766. (Percy et Laurent in Dict. des Sci. Méd., Paris, 1818, vol. xxxv, article "Museum.")

be that of the Mott Museum in New York. Commenting on this fact, Sir James Paget writes me that he does not know of any large private pathological collection, and that he believes the change to be entirely for the better.

The necessities of modern progress in anatomy, physiology, and pathology have led to the creation of medical museums in all parts of the civilized world. In most of the continental capitals these are connected with universities supported by the State. In Great Britain and in this country they are, as a rule, connected with private or semi-private institutions for medical teaching. This difference is connected with the relative position which medicine holds in the educational machinery of the State in different countries. Where medical education is furnished by institutions directly supported by the government, the museums, which are a part of the apparatus required, are, of course, also supported by the government.

Through the aid of friends, whose kindness in replying or in obtaining replies to somewhat troublesome inquiries I cannot sufficiently acknowledge, I have obtained certain data with regard to some of the most important medical museums now existing in the world, and a part of these data are summarized in the table before you. Evidently, the city having the most valuable aggregate of anatomical and pathological specimens at the present time is London, which contains the collections of the Royal College of Surgeons, of St. Thomas's, Guy's, St. Bartholomew's, St. George's, and other hospitals, and of University College, the College of Physicians, and others. The oldest public anatomical museum in London is probably that of St. Bartholomew's, which, in 1726, had a room set apart for the purpose under the charge of John Freke, and which received the private collection of Abernethy. The most important medical museum in the world, and the one which has exercised the greatest influence in giving direction to anatomical and pathological studies, and in serving as a model for the formation of other collections, is undoubtedly that of the Royal College of Surgeons of London, the foundation of which was the collection made by John Hunter, purchased by the government in 1799. In one sense it is not a government institution, the funds from which it is now supported not coming directly from government grants; but in another sense it is truly such, since the College may be looked upon as an agent of the government having special charge of matters connected with medical education, as it is the principal examining body for those proposing to practise surgery in Great Britain.

The great value of the Hunterian collection lies in the breadth of its scope, which includes every branch of medical science; but it is preëminent in illustrations of human morphology and its abnormities. The museums of the great hospital medical Schools are relatively richer in the department of pathological anatomy, specimens of which they have greater facilities for obtaining. Among these there is, of course a certain amount of duplication of matters of interest; but no two pathological specimens are precisely alike, and the question discussed in the Paris school one hundred and fifty years ago; viz., "An pro distinctis ægris ægritudines diversæ?" is one that often occurs to a curator as he examines new specimens which differ but little from those already in this collection, but which do differ in some respects, and with regard to which he must decide as to whether, upon the whole, they are worth the trouble and cost of preservation.

Edinburgh and Dublin have also each large and valuable collections pertaining to anatomy and medicine.[5] In Paris the medical museums are those of the Faculty of Medicine, including the Musée Dupuytren devoted to pathological anatomy, and the Musée Orfila devoted to human and comparative anatomy, materia medica, natural history and instruments and apparatus.

Professor Leon Le Fort, to whom I am indebted for data with regard to these collections, remarks that a large proportion of the anatomical specimens of the Orfila museum come from candidates who take part in concours opened for positions connected with the anatomical teaching of the faculty — such as prosectors, demonstrators, etc., each candidate being required to furnish from ten to thirty specimens.

The medical museums of other European countries are connected as a rule with universities, and it is to be remembered that in these the different branches of medical instruction are each both more specialized and more comprehensive than is the rule with us. The professor of anatomy, of physiology, of pathology, has each his own building or institute, and, therefore, each his own museum; and unless this fact be held in view, comparisons between Continental and English, or American, medical collections may give very erroneous results.

With regard to the museums connected with American Medical Schools I will say little, referring you to the table and appended notes for such data as I have been able to collect. I am aware that in so doing I put aside a splendid opportunity to enlarge upon the general superiority of all these collections and the peculiar excellencies of each, but I think that you all know as much about these as I do, and there is time only for details with regard to the one American Museum in which I am specially interested. I will say only that the best museum connected with a medical school in this country is the Warren Museum in Boston, and that the history of the collections of wax models, upon which several of our museums have expended large sums of money, is very instructive as to how not to do it.

So far as mere number of specimens is concerned our own national medical collection is one of the eight largest in the world, and is increasing more rapidly than any other.

This collection, known as the Army and Navy Museum, owes its inception to Dr. Wm. A. Hammond, one of whose first acts after becoming Surgeon-General, in 1862, was to issue a circular stating that "as it is proposed to establish in Washington an Army Medical Museum, medical officers are directed diligently to collect and to forward so the office of the Surgeon-General, all specimens of morbid anatomy, surgical or medical, which may be regarded as valuable; together with projectiles and foreign bodies removed, and such other matters as may prove of interest in the study of military medicine or surgery."[6] By the end of the year

[5] I am indebted to Sir James Paget for the information given with regard to the greater number of the British museums. I had originally intended to attempt to obtain such data only from four or five of the largest; but on sending my little list of questions to Sir James he took such a kindly interest in the matter as to send a copy of these queries to a number of other museums with the request that they might be answered.

[6] Circular No. 2, Surgeon-General's Office, Washington, D. C., May 21, 1862.

over a thousand specimens had been collected, and the catalogue printed in 1866 showed that it contained 7716 specimens. It is not my purpose in this address to trace the history of its development; that must be done elsewhere. It has recently been placed, with the Library, in a conveniently arranged fire-proof building, and on the first of July last contained over 15,000 specimens besides those contained in its microscopical department, divided as follows:

Comparative Anatomy	1,689
Pathological	8,354
Medals	384
Microscopical specimens	10,416
Normal Human Anatomy	2,961
Instruments and Apparatus	814
Microscopes	141
Miscellaneous	835

Besides these there are 375 specimens pertaining to normal human anatomy and 726 to pathological anatomy, which are in what is called the provisional series.

It is not, however, by number of specimens that the importance and value of museums of this kind can be judged; and in this case such a comparison would give an exaggerated and erroneous idea of the value of this collection. My object in this address is not to boast of what we have, but to indicate what we want; to point out what a National Medical Museum, arranged to meet the wants and interests of this country, should be, should have, and should do, and to suggest some of the ways in which this is to be brought about.

At first the Army Medical Museum was limited to military medical subjects, but of late years its scope has been greatly broadened, and is now nearly the same as that of the Royal College of Surgeons. It includes human anatomy, physiology, pathology, somatological anthropology, instruments and apparatus, and illustrations of methods of teaching connected with special departments of practical medicine. It does not at present include hygiene or materia medica, except in their immediate relations to the military medical service, and this for reasons which will be stated presently. That our National Medical Museum should be broad and comprehensive in its scope there can be no doubt, its requirements in this respect being quite different from those of collections formed and used more especially for the purpose of teaching medical students. The most practically valuable of these last are those formed by individual professors to suit their own specialties and methods of teaching. They need not, as a rule, be large. I may even say that they should not be large; for the labor of properly preserving a large collection is great, and the student, with his limited time and want of knowledge of what to look for, can examine but few specimens so as to profit by them. For the same reason specimens of rare abnormalities, of double monstrosities, etc., are of little use in ordinary medical teaching as given in this country, and are not specially desirable in the museums of our medical schools.

You may have noticed that, in speaking of the scope of our museum, I said it included "human anatomy." This phrase does not mean that it has no specimens illustrating the structure of other animals — for it has many, and needs many more — but it means that in this department its main purpose is not to make comparative anatomy an end to itself by exhibiting all known variations in structure throughout the animal kingdom as a basis for their study in relation to development and environment, causation and results. In other words, it is not an anatomical museum, but a medical museum. The broad field of general biology, including natural history and comparative anatomy, will ultimately be covered by the National Museum, and in our medical collection it will be quite enough to illustrate human anatomy fully, using so much of the structure of the lower animals as will be useful in explaining why certain parts of the human body are thus, and so, and not otherwise. No sharp line of distinction can be drawn between the field of work of the general and that of the medical museum. So far as morphology is concerned, they must necessarily overlap somewhat, since both want a certain number of the same specimens, although using them to illustrate different points of view.

The medical museum should possess a series of specimens showing the normal anatomy of the domestic animals, or of animals used in experimental pathology, pharmacology, or physiology, as a basis for comparison with abnormal or pathological specimens derived from the same animals. It is in the section of embryology, illustrating laws of heredity and development, that specimens from the lower animals are most interesting, and this is especially the case in the study of human abnormalities and monstrosities. It is quite possible that to some anatomists it may seem that no limitation should be placed to the scope of the museum in this direction, for it is easy to trace some connection between any variation in structure in any animal and some structure, normal or abnormal, in man, but the limitation is placed, with reference to the work of the National Museum, so as to secure the best results.[7]

The kind of specimens most valued for illustrating anatomy in a museum is now very different from what was sought for in the first half of this century. Dried and varnished dissections, showing bloodvessels, etc., are now looked on as nearly useless, and are kept only as historical relics. Elaborate dissections under alcohol, mounted in opaque dishes, with flat glass covers, and sections of frozen bodies, similarly mounted, are what the student and the practitioner most desire to see. In our museum there are some excellent specimens of this kind, prepared under the direction of Professor His, of Leipzig; of Professor Cunningham, of Dublin; and by our own anatomist, Dr. Workman. These, however, are only samples to show how the work should be done. We require several hundred such specimens to illustrate properly regional anatomy in relation to age and sex, while the possible applications of the same methods to the illustration of visceral displacements, hernias, and deformities of all kinds are boundless. As regards physiology, but little can be done by museum specimens to illustrate function, as distinguished from form and structure. The so-called physiological series in the Hunterian collection is a series of organs illustrating variations in different families of the animal kingdom, or at different ages; in other words, it illustrates ontogenic and phylogenic development. The things students or teachers of physiology are most anxious to see in a museum are specimens of instruments and apparatus employed in experimental physiology, or in

[7] In the great majority of medical schools in this country anatomical teaching has a much more limited field than in the German universities, and our professors of anatomy, following English traditions, are usually in training for surgery. We have, however, several who are devoting their entire work to anatomy in the broad sense, and for its own sake, and it is in this direction that progress will be made.

the measurement of the special work of different organs, or in illustrating lectures on physiology. Illustration of results obtained in experimental pathology often belong quite as much to physiology; as, for example, specimens of results of Gudden's atrophy method.

The Army Medical Museum has only a beginning of such an anatomical collection as I have indicated as desirable. Like all other museums, it is richer in specimens illustrating osteology than in any other branch of anatomy, simply because such specimens are the easiest to obtain and preserve. We are accustomed to think that human anatomy is nearly exhausted as a field for original research, and that, at all events, every important organ or muscle or nerve has been figured, described, and named. Granting this, so far as the adult is concerned, although it is by no means true even for him, we have still to study the development of each of these organs or groups of organs, as seen at different ages, and, for some of them, in different races. As fast as these points are seen to be of practical interest, either in connection with diagnosis or the surgical treatment of disease, they are investigated; but an ideal museum should furnish the investigator the means for his researches; and it must, therefore, collect specimens without special regard to what is at present known to be their practical interest. The collection of such series of specimens of each joint, region, and organ, as I have in mind, including sections and dissections at different ages, from the earliest appearance in fœtal life to extreme old age in man, and in many cases in the lower animals, is a slow process. Such specimens, and especially such series of specimens, can only be prepared by a skilled anatomist, and there are few such; hence the formation of our ideal anatomical collection, limited though its scope may be, must be a work of time.

There is ample material and scope for original work for half a dozen skilled anatomists for many years to come to supply the demands of this museum for illustrations of human morphology in its various relations, and it is not desirable to scatter effort over too wide a field.

The pathological section of a medical museum is its main feature, being, as Mr. Flower remarks, the section to which, in the eyes of Hunter and his successors, all others form merely the introduction. It is true that to some physicians specimens in this department seem to have little value; but they are balanced by those physicians whose chief interest in a case of disease is to get a post-mortem. No doubt, much of the ancient pathology, and some of that which is quite recent, is comparable to the looking in the dark for a black spot which is not there, but those who despise pathology, and devote their entire attention to symptoms and treatment, err as much on one side as those who talk and act as if a knowledge of pathological anatomy could take the place of clinical experience do on the other. I do not know, however, that the doctrine usually preached, namely, that each man should attain the just mean in his views, is a true one. Certainly, it is not the principle on which the universe seems to be constructed; the balance is maintained, not by having everything exactly symmetrical, but by excess in one direction balancing excess in another.

To secure pathological specimens in their most instructive forms for museum purposes requires, in many cases, not only considerable variation from the usual routine methods of post-mortem examinations, but very considerable delay in ascertaining the results. If, for example, we wish the best specimens of the results of cerebral disease, the brain must not be removed and sliced up in the usual manner; it should be hardened *in situ* to a certain extent, and its sections should be carefully considered with reference to their preservation in their relations to each other before they are actualy made. There is need of a treatise by a skilled pathological anatomist, giving such methods in detail from the modern point of view.

Thus far the great majority of contributions of pathological material to our museum have been made by army medical officers: but some of the most valuable specimens have come from practitioners in civil life, and it is to these last that we must appeal for illustrations of the effects of disease in all parts of the country. There are difficulties in the way, of course. The physician in private practice does not make post-mortem examinations in five per cent. of the deaths of patients under his charge, and when he does come into possession of an interesting specimen he is very naturally inclined either to keep it himself, especially if it is an osteological one which can be preserved with little expense or trouble, or to put it in the little collection which has been formed at the dispensary, or asylum, or hospital. I hope, however, that when it becomes known that we are trying to form in Washington a complete medical museum for the benefit of the whole medical profession, and that we have the means of permanently and securely preserving, and exhibiting to the best advantage the specimens sent to us, I say that I hope and believe that when this is understood, many physicians will be willing to take a little trouble, and to give up something of their very natural impulse to keep a trophy of their skill, or a curiosity to talk about, in order to promote the general good.

As a rule, single specimens of abnormity or of disease have little scientific value; it is only when they are associated with others that they both furnish and receive light. To this audience it is unnecessary to give other reasons as to why physicians should contribute material to the national collection, nor as to why the curator of this collection is justified in being very bold in requesting such material; but there is one objection to parting with certain specimens which is sometimes made, and to which I will refer, as it brings up one of the ways in which our ideal medical museum can meet a practical need of the family practitioner. The objection I refer to is that the specimen may be important from the point of view of medical jurisprudence; that it has a special bearing in certain suits for malpractice, etc., and that, therefore, the owner wishes to keep it to be used as testimony to protect himself or his neighbors. There is some truth in this; but it is also true that such specimens brought together in the national museum would be just as available as ever for the protection of the rights of the individual physician, while they would also be available for the benefit of the whole community.

Whether the specimens preserved are, or are not, desirable for and useful to the museum, it is certain that the securing and forwarding them is a very useful thing to the physician who does it. It tends to keep him in touch with current living thought and work of the profession, to direct his attention to the connection

between symptoms and the mechanism of their production, which is often so important in deciding on the remedy to be used, and, above all, it gives him an interest in other men's work, and thus broadens his views and increases his knowledge and pleasure.

Having obtained the specimens, the next difficulty is so to prepare and preserve them that they shall be available for study. The great majority cannot be preserved in such a manner as to retain their natural color, size and texture. No doubt more might be done in this direction than is usually done. It is possible to stain or paint portions of specimens in such a way as to give some idea of the normal appearances, but thus far, I think, experience shows that the best medium for the permanent preservation of wet pathological specimens is alcohol, and this will contract and harden most tissues, and remove the color from nearly all. It is also an expensive mode of preservation for large collections, and requires constant care to prevent the effects of evaporation. It does not follow, however, that such specimens are of little value, and that, as some have urged, it would be better to seek to obtain records of the results of disease by colored drawings or models. The pathological specimen, whether seen at the post-mortem or years afterward in a museum, is to the scientific pathologist or the practical physician, merely a sign or hieroglyph of the morbid process which has produced it; it is a result, in most cases, of interest not in itself, but because of the preceding phenomena which it connotes. As Sir James Paget has said, the same objection, namely, that museum specimens are unfit for the teaching or the study of pathology, might be made to the study of botanical specimens in an herbarium. "In both cases alike the changes produced by preparation are so far uniform that any one accustomed to recent specimens (and no others should study either herbaria or pathological collections) can allow for them or 'discount' them. Just as an anatomist can discern, in a recent specimen of disease, the healthy structure; so, but often much more clearly, can the pathologist or any careful student discern in the prepared specimen the chief characteristic of the disease."[8] Colored drawings, casts and models are of great value in supplementing original specimens, but they cannot wholly replace them.

A good preparation, whether of normal or abnormal structure, but especially the latter, is valuable, not only for what we can see in it, but also for what we overlook or misinterpret, and which our successor may see, and see rightly. In this it is better than a mere description; yet the latter is equally necessary and much more easily preserved and made generally useful. Next to the preparation itself in accuracy and completeness of record is the photograph, and next to this is a good model, or a careful drawing.

In medical and surgical matters, as in most other things, we habitually think in terms of vision as interpreted by touch. Hence, in part, the importance of the so-called object-teaching, and the fact that what the medical lecturer shows his class will usually be much better remembered and understood than what he says to it. And while pictures and diagrams are of great assistance they are by no means as instructive and suggestive as representations in three dimensions, that is, models, if the thing itself is not available.

One of the most important sections of our museum is that devoted to microscopy, including normal and pathological histology and photomicrographic work. In the cabinets there are nearly 11,000 mounted specimens, illustrating almost every field of microscopical research. Many of these were made twenty years ago and more, and were mounted by processes which have not given good results, so that Dr. Gray, who is in charge of this section, estimates that about 3,000 will be set aside as worthless; but the rest form a very valuable series to which additions are being constantly made, and materials for which we are specially anxious to obtain. In connection with this section a series of cultures of chromogenic and pathogenic bacteria is kept up for museum exhibits, and also to illustrate methods of work.

While the great majority of the specimens in a medical museum have some relation to diagnosis, prognosis or therapeutics, the number of those which are of direct interest to the so-called practical physician is not very great. It includes models and casts illustrating dermatology, morbid growths, the results of amputations, excisions, plastic operations, etc., and instruments, apparatus, dressings, etc., of all kinds. Here also may be classed hospital fittings and furniture, means of transportation for sick and wounded, model cases of instruments, emergency chests, etc. Our medical museum has a fair beginning of a collection of this kind, including over a thousand specimens; but many more are needed to make it reasonably complete. If each medical man who devises a stethoscope, a pessary, a speculum, an ophthalmoscope, or an electro-therapeutic appliance with which he is well-pleased, would send a specimen to the collection, its increase would certainly be rapid, and it could always show the latest improvement.

An ideal medical museum should be very complete in the department of preventive medicine, or hygiene. It is a wide field, coveriag, as it does, air, water, food, clothing, habitation, geology, meteorology, occupations, etc., in their relations to the production or prevention of disease, and thus far has had little place in medical museums, being taken up as a specialty in the half dozen museums of hygiene which now exist.

Our own National Museum of Hygiene, is, as you know, under the direction of the Medical Department ot the Navy. It is a very interesting collection of sanitary appliances of various kinds; but it is not well-housed, is much overcrowded, and its location is so inconvenient that it receives but few visitors, and therefore, has by no means the educational influence that it ought to have. It should be provided with ample quarters in the immediate vicinity of the National and of the Army Medical Museums, to both of which it would form a very desirable supplement. In our medical museum, at present, military hygiene only is illustrated, and this only in a few branches, such as hospitals, means of transportation of wounded, etc. As regards materia medica, an exceedingly well arranged collection, including about 5,000 specimens, has been formed in the National Museum, mainly under the direction of Dr. J. M. Flint, of the United States Navy. The relations of materia medica to natural history, commerce, and the arts, which are subjects belonging especially to the National Museum, are as close as they are to medicine, and I am very glad that our national collection in this branch is where it is, and under its present management. In the Medical Museum we have a collection showing what is supplied in the way of drugs, instruments, etc., to the

[8] British Medical Journal, 1880, ii.

medical department of our army, and, as opportunity offers, we shall extend this to include the medical supplies of other armies or services.

The extent to, and manner in, which a medical museum should deal with anthropological and ethnological problems are not questions to be discussed in the abstract with advantage, since the answers must differ greatly according to circumstances. In our National Museums the matter has been so arranged that all material relating to anthropometry, or to real or supposed structural differences in man, according to race, are cared for in the Medical Museum, while specimens illustrating manners and customs, implements, weapons, clothing, pottery, etc., are taken charge of in the anthropological division of the National collection.

The Army Medical Museum contains what may seem a large amount of material relating to human osteology, and especially craniology, in its relations to North American ethnology, or the history of the development of different varieties of man on this continent; but it is not actually half large enough to permit of drawing definite scientific conclusions from it. The majority of the crania which it contains have been measured to a certain extent, and the results have been published; but many other measurements are desirable to permit of comparison with series taken elsewhere, and even measurements already made must be repeated by later and better methods. We have been trying some experiments with composite photography and superimposed contour tracings as a means of obtaining typical outlines and dimensions for race groups of crania, and these give promise of good results. If the collections of crania of North American Indians in Boston, New York, Philadelphia and Washington could be brought together, a very much better average presentation of the majority of tribes or groups would be obtained than can be furnished by either of these collections taken separately. By composite photography and tracings, combined with uniform methods of measurement, we can practically place these collections together, and obtain results nearly as satisfactory as if we had them all in one room. We have also fitted up one large room with instruments and apparatus for anthropometry in its widest sense, including psychophysical investigation, and it is intended to make this a complete laboratory for illustration of methods of work.

In London, arrangements have been made to have such an anthropometric laboratory in an out-building at the South Kensington Museum. The two things have no connection, and it seems to have been placed there because it would obtain more visitors desirous of being measured and tested than if placed anywhere else. In this laboratory, which is, I believe, essentially the same sort of institution as that arranged by Mr. Francis Galton at the Health Exhibition in 1884, and is planned by Mr. Galton; any person can have the regular series of measurements and tests made upon himself for a charge of six cents. There are difficulties in the way of making a charge for such measurements in a government establishment, and there are also difficulties in undertaking to do such work gratis, chiefly on account of the cost. It is, however, so desirable that it should be done, and the data which such observations systematically carried on for a series of years would be so valuable, not only from a scientific point of view, but for practical purposes in connection with life insurance interests, and very possibly with practical medicine, that we should endeavor to overcome these difficulties in some way, and I think it can be done sufficiently, at least, to stimulate private enterprise in this direction. It is possible that we may yet see in large cities establishments of this kind, directed by skilled and reputable physicians, having the confidence of the profession, where not only normal but abnormal conditions can be determined; places where the secretions can be tested chemically and microscopically, ophthalmoscopic and endoscopic examinations of all kinds made, the mode of functioning of muscles and nerves determined, and an authoritative record of the results made for the use of the individual, as evidence of his condition, or for the information of his physician. It would require an already established reputation and much skill and tact on the part of the director of such a laboratory, with absolute refusal to give prescriptions or advice in any shape, to make it fully successful; but it may be done.

An important feature of our national medical museum should be to show methods of research and of instruction for the benefit of the investigators and teachers of the country. This includes instruments and apparatus, and, to a limited extent, illustrations of the modes of using them and of the results; it also includes diagrams, models, etc., used for illustrating lectures. For example, as soon as Koch's researches became known in this country, physicians, and especially medical teachers who visited the museum, asked if we could show them the apparatus used by Koch and Pasteur in bacteriological work, and eagerly examined the few specimens of cultures on solid media which we were able to exhibit. The anatomist comes to the museum quite as much to see methods of mounting and preservation, as to see the specimens themselves; the physiologist does not expect to see function directly exhibited, but he does hope to find information about kymographs and constant temperature apparatus, and he wants to see whether Kühne's artificial eye is so useful for teaching purposes that he ought to get one to illustrate his lectures.

Medical museums are not, as a rule, freely open to the public, nor are they collected or arranged with reference to interesting or instructing non-professional persons. The Medical Museum at Washington is the chief exception to this rule, and it is so, because it was placed in Ford's Theatre, the scene of the assassination of President Lincoln. Many visitors to Washington, both men and women, wished to see this memorable spot, and in doing so, necessarily went through the Museum. This gradually led to the adjusting of the specimens exhibited with a view to the fact that they were to be seen by a number of non-professional persons of both sexes. Certain groups of specimens were put aside and not shown except to persons known to be physicians, while other groups were given prominent places because they interested the public, although not of great professional or scientific value.

On the other hand the public has gradually become accustomed to consider the Army Medical Museum as one of the "sights" of Washington to be visited by male and female, old and young, and when a stranger comes to the city and inquires what he ought to see, this museum will probably be named to him next after the National Museum. Since the collection has been moved into the new building near that devoted to the National

Museum, of which it may almost be said to form a part, the number of visitors has rather increased than diminished, and it has been found desirable to consider with care some problems which this state of things has forced on the attention of the curator. That educated men and women should have some curiosity as to the structure of their own bodies, the functions of certain organs, the arrangement of parts in certain localities where they have felt pain or discomfort, or the changes which have caused death in relatives or friends, is perfectly natural and proper, and there is no objection to gratifying this curiosity to a very considerable extent. The wonder to me is, not that boys and girls, youths and maidens, men and women, like to see specimens which will teach them something on these points, but that so many of them remain ignorant of, and careless about, the wonderful mechanism of their own bodies. Now what are the specimens in a medical museum which most interest the public, and in what direction is it expedient to try to direct this interest and to do educational work by means of the exhibits? In the first place, the majority of men and women, when at leisure and trying to amuse themselves, or to pass away time, prefer things that appeal more or less to the emotions, rather than those which appeal only to the intellectual faculties. The skeleton of a hand will be barely glanced at; but if it were known that it had been the hand of a great general, a great writer or a great criminal, it would be a specimen that almost every one who visits the museum would wish to see. Usually it is not expedient nor even possible, to furnish the personal data which would arouse this purely emotional interest.

When people come to the Army Medical Museum and ask where General Smith's brain, or Judge Brown's heart, or the Hon. Mr. Jones's larynx, or Guiteau's skeleton is, and are informed by the attendant that he does not know where it is, and is not even certain that it is in the collection, there are some expressions of disappointment, it is true; and sometimes the curator is appealed to as a last resource; but a few words of explanation as to what the main purpose of the museum is, and the suggestion that one would not like to have his or her father's skull displayed and labelled with his name, no matter how great or how infamous he may have been, is usually quite sufficient to satisfy the seeker.

This addition of interest to a specimen by calling attention to certain sentimental or historical associations connected with it, is not only proper but desirable, for all specimens not derived from the human body; but for these last, the rule should be to wait a hundred years before publicly labelling them with the names of the persons from whom they are derived.

For scientific and professional purposes we of course want a history of the specimen, which will, as far as possible, give the data connected with its peculiarities, and among these may be race, occupation, and even name, though the emotional element does not enter into it at all. If, for example, we had before us a specimen of cancer of the stomach, it might be of great interest, taken in connection with the symptoms, or in regard to the question as to whether pylorectomy or gastro-duodenostomy would have been justifiable; but from a scientific point of view it would add little to the value of the specimen to know that it was from the body of Napoleon and not from an unknown soldier.

To return to our question as to what interests the public. Of specimens illustrating the anatomy and physiology of man no doubt the most interesting to non-medical persons are those connected with reproduction. In the hall of the Army Medical Museum, which is open to the public, we do not place specimens illustrating specially the anatomy of the genital organs; but we do exhibit a series illustrating embryology, and especially the development and growth of the human embryo, and there is no case in the museum before which the average visitor will linger longer. The specimens are clearly labelled; a lady may go there alone, and, unnoticed, may at her leisure learn something about her own peculiar function, and the provisions for the life of the new organism; and I think she will hardly find the same facilities for this self-study anywhere else in the world. I do not mean by this that other museums may not have larger and more instructive collections of such specimens, but that they are not available for the information of modest, respectable, non-professional women.

In what has been said thus far, it is chiefly the utilitarian point of view that has been made use of; but this is by no means the whole matter. No art, and no branch of science should form the sole end and object of a well-balanced life, and there are objects in every large museum which are of great interest, though they appeal rather to the emotional than the intellectual faculties of the spectator. There are many specimens in the Army Medical Museum which I would rather see removed than to lose John Hunter's lancet, which has no scientific interest whatever. So also its collection of between three and four hundred medals and tokens relating to medical institutions or distinguished medical men, or commemorating outbreaks of pestilence or the victories of preventive medicine, is one which should be made complete and fully displayed, though it would not be easy to demonstrate its utility to any one unless he were interested in the history of the struggles and triumphs of the medical profession.

The objects of a medical museum are to preserve, to diffuse and to increase knowledge. Its conservative function is to form a permanent record of what has been demonstrated and to fix the meaning of terms. Even in my briet experience of thirty years the terminology of anatomy, physiology, pathology, chemistry, and of most of the specialties has greatly changed, and this not only by the addition of new terms, but by the dropping of old one. To get useful results from the older literature we must know the precise significance of the old words, and, in some cases, the best way to learn this is to examine the specimens prepared by those who used such terms in their descriptions. The specimens in our museum which came from the collections of Professor William Gibson and Dr. Frank Hastings Hamilton are especially valuable because they were the basis of practical teachings, and should be examined by any one criticizing these teachings.

A large proportion of the pathological specimens in this museum illustrate conditions which now rarely occur, forming a group which it is safe to predict will never be duplicated. It is not only that they were gathered during a great war, but that they illustrate the results obtained when antiseptic surgery, as now understood and practiced was unknown. Never again, I hope, will there be brought together such a collection of the effects of pyogenic microörganisms on gunshot wounds, especially of bone, as may be seen in its cases.

The museum also preserves, for future investigations, objects whose nature of relations are not understood at the time when they are received, and which occur so rarely that the means of studying them by comparison can only be obtained through such preservation.

Upon the function of a museum as a diffuser of knowledge;—as a means of education—it is needless to dwell. That it should also strive to increase knowledge is equally certain. This is to be effected by study and comparison of its materials. The results of such study and comparison of a part of the Army Medical Museum collection have appeared in the volumes of the *Medical and Surgical History of the War*. Another part will, I hope, soon be utilized in a study of its collection of human skeletons and crania which has been commenced by Dr. Matthews, of the Army. But a considerable part is as yet only in the stage of agglomeration, and our present business is to collect and preserve, leaving to the future its full utilization.

A medical museum is really used, for purposes of study, by very few persons; but through the teaching of those few its lessons are made known to the whole profession. American physicians in investigating a subject do not, as a rule, think of inquiring as to what museums can show with regard to it, simply because they have not had convenient access to large collections and are not accustomed to make use of them. Thirty years ago we were in much the same situation in respect to medical literature; but as the libraries have grown, desire for bibliographical research has grown also, and I think that in like manner when we have secured a comprehensive National Medical Museum it will not only be made use of, but will give a powerful stimulus to the formation and progress of other more special collections elsewhere.

What should be the relation of this central national collection to those formed in different parts of the country, either in connection with medical schools, or with museums of broader scope? Certainly they should help one another, and this can be done in many ways. I do not in the least object to a generous rivalry to do the best work, to have the most instructive and the most artistic preparations. That is a good thing. But I would say to the anatomist of a school, when you have made a preparation which is noteworthy, offer to make a copy for the national collection, where it will be seen by the anatomists of all schools and of all countries. To the pathologist of a medical school I would say, after you have secured type specimens of your own collection put aside other good specimens for the National Medical Museum, which will furnish you materials for the purpose.

On the other hand, the collections of the National Museum are available for study by any proper person, and its duplicates should be used to aid other museums which may be in special need of them.

In common with several of the largest and most important medical museums, more especially those of the Royal College of Surgeons and of the Faculty of Medicine of Paris, the Army Medical Museum has the advantage of being closely associated with a large medical library which is in the same building, and at present under the same direction. The increased utility and attractiveness which this gives to both library and museum is very decided.

It is true that in some other institutions similarly arranged there has been some grumbling as to the proportion of funds allowed to the museum and to the library respectively, the museum enthusiast claiming that the librarian would rather have one rare old pamphlet than half a dozen entirely new vertebrates, while the bibliophile is sure that the demand of the profession for access to a full supply of books and journals is much greater than that for access to specimens. I can only say, from my own experience, that one who has charge of a library only, will probably not hesitate to take museum funds, if he can get hold of them, to buy books; but that when one person is responsible for both he will endeavor to give each a fair share of the resources at his command.

If we had to choose between having a great national medical library and a great national medical museum, no doubt most of us would take the library, because it would be of more immediate use to us; but no such unpleasant alternative is forced on us. There is no reason why we should not have both, and we must have both.[9]

I have time for only a very condensed statement of the wants of our national Medical Museum. In the first place it needs the intelligent interest and friendship of the medical profession of this country. To a very considerable extent it has had this; were it otherwise it would not be what it is, nor where it is. But it needs more of it, and it can never have too much. Every medical man in this country should help a little and provide for the perpetuation of his name as that of a physician interested in the progress of the profession by sending at least one specimen to it. It is omnivorous in its demands for material, as will be seen by the circular which it has recently issued. But I will name as special wants, human embryos, especially those of a very early age, monstrosities and malformations of all kinds in man or in the lower animals; results of old injuries, such as fractures or dislocations, or of surgical operations, such as excisions, stumps, etc.; injuries and diseases of the eye, ear and nose; new growths of all kinds; diseases of the brain and spinal cord; and specimens illustrating the condition of bones, joints, brain, larynx and other organs in extreme old age.

In the second place it needs a regular supply of funds from the general government. To form and keep in proper condition such a medical museum as this should be is a more difficult and expensive matter than those not acquainted with such work would suppose, and the gifts of specimens from the profession must be supplemented by ample means for the preparation, preservation and proper display of these specimens, and also for the purchase of apparatus and typical specimens of foreign work, in order that the Museum may be always able to show the latest state of knowledge and the best ways of doing things.

The annual appropriation for the Museum at present is $5000. This is sufficient, except that the printing of the catalogue of which I shall speak presently, must be an extra charge; but the medical profession should see to it that the amount is not reduced in the rhythmic spasms of partial economy with which some of our statesmen are afflicted.

The third need of the museum is of a series of the right kind of descriptions of its specimens, given on

[9] "There are few things in relation to our science of which I am more sure than this, that every possible method of studying it should be by all possible means promoted." Sir James Paget, in Lancet, January 22, 1887, p. 159.

labels and in a catalogue. Unaided by such descriptions it has for each man that which he can see in it, and no more. One man will see nothing but an old piece of bone, a shapeless mass of tissue bleached by alcohol, a case of old dingy brass instruments. Another will see in the same things a rare joint atrophy, implying curious abnormal nerve influence; a leprous nodule, whose history, if we knew it, would reach back through the lazar-houses of the Middle Ages to the far east, and whose bacilli may be the lineal descendants of those that vexed Naaman the Syrian; a case of microscopes illustrating the development of that instrument, from the first rough iron tube of the spectacle-maker of Nuremburg to the delicate and complicated instrument through which we now peer curiously into that world that lies within the world of unassisted vision. By our labels and catalogues we must tell men what to see; but to do this we must first see ourselves. The aphorism that a first-class museum would consist of a series of satisfactory labels with specimens attached means a good deal. Something has been done in this direction, as you will see on inspection of the cases; but I often wonder what sort of labels a man who has spent years in investigating the normal and abnormal structure and relations of one organ would write for our specimen of that organ. Such help as this we need; kindly, truthful criticism, the pointing out of errors and of new points of view for this mass of material.

We also need a series of printed catalogues. One of these should be in the form of compact handbooks relating to particular sections of the collection, and intended partly for the use of visitors while in the museum and partly as a ready means of letting distant friends know what material it most needs in different departments. It should also print a complete illustrated catalogue of the whole collection for the use of the investigators and teachers of the profession. Congress has been requested to grant authority for the printing of such a catalogue by the Government Printer. The material for it is nearly ready, and it would make three volumes each the size of one of the volumes of *The Medical and Surgical History of the War of the Rebellion*.

The subject of museum organization and management, is one of those with regard to which it has been said that a man who is interested in it passes through three successive states of mind; namely, First, he thinks he knows almost all about it, except a few minor points of detail which he is going to look up. Second, he feels that he will never know anything about it. Third, he believes he knows a little and hopes by experience and study to know more.

The museum needs earnest and well-trained students to work up its collections so as to advance knowledge, and, at the same time, to display properly the specimens so as to make them most instructive. To all such students we shall endeavor to afford opportunities for this work. Precisely how this is to be effected is not yet clear, but here is abundance to be done, and there are quite a number of men coming on the stage who want to do such work for its own sake, because it gives them pleasure. Sooner or later we shall have half a dozen or more of specially trained men busy in the laboratories and work-rooms of the museum, each engaged on his own problems, and the whole for the common good.

The medical museum hints at matters which lie outside the scope of known physical and chemical laws. Physicians have not, as a rule, been very virulent theologians; their studies and their daily work tend to give them compensation of bias in this particular, and, therefore, in this age of transition in beliefs, it is not so true of them as of others, that "the old hopes have grown weak, the old fears dim, the old faiths numb." In our medical museum yonder may be found abundant illustrations of the results of physical and chemical actions and reactions upon what was once living matter, and was connected with centres of consciousness, of intellect, of emotions which imply something more than ordinary protoplasm or mere metabolism. It brings together strange company. The men who dwelt on the sides of the Andes in the old Aztec days, the men who built cities in the Gila Valley centuries before the days of Columbus, the Esquimaux, and the Indian of the plains, black and white, red and yellow, all sorts and conditions of men are represented in those bony caskets which once held their centres of life and thought; but now are reckoned only as so many crania in the Museum catalogue. The great majority of the pathological specimens imply either suffering or death, or both, of the individual from whence they came. Some of them are the results of intemperance, of lust, of folly and crime; but some are the results of unselfish sacrifice for the good of others, true flowers of blood and pain. A large group of them form one of the relics of an acute paroxysm of disease of a great nation. The old pensioner likes to keep the battered ball which crippled him, and so these relics have an interest beyond that which is purely professional. That the nation is not crippled by its loss, takes nothing from their interest, and the fact that we are physicians does not imply that we look upon them from a medical or scientific stand only. Those of the combatants who survive, are now better friends than ever, and the museum specimens, coming as they do from the sick and wounded of both armies, and contributed by both Union and Confederate surgeons, enforce the lesson of the unity of the profession and of its interests, as well as that of our country.

Our museum, like the library with which it is associated, includes all the specialties. No physician is so learned or skilful that he can find no instruction there, and no one is so ignorant that he cannot comprehend some of the lessons which it teaches. Taken together these institutions should contribute in no small degree to our national prestige, for which eminence in scientific work and teaching is an essential element, and if it be remembered that they are only twenty-five years old, and that during that period we have been making medical history at a tremendous rate, surely some incompleteness and crudeness may well be excused or overlooked.

Speaking in behalf of the army medical department and for the dead as well as for the living, who have been charged with this work, I can truly say that we have been very proud of our charge, and that we have done our best, each according to his capacity and opportunities to make the museum and library such as a great profession and a great nation have a right to demand.

— Benevolent old gentleman in the park, to nursery-maid with charges: "Are those children twins?" — "Oh no, sir." — "Dear me, what is the difference in their ages?" — "Six hours, sir."

THE RELATION OF SOCIAL LIFE TO SURGICAL DISEASE.[1]

BY D. HAYES AGNEW, M.D.

THERE is no tyranny more exacting or despotic than that exercised by the conventionalities which govern our living. All stages of life from infancy to old age are under its domination. It dictates the education, the manners, the walk, the dress, the forms of speech — in fine, the whole being. Beyond all contradiction, the behests of fashion are vastly more influential in governing public conduct than any arguments drawn from the teachings of structure and function. As a rule, when the conflict is between taste and reason, the victory will be on the side of taste. In nothing is this more forcibly displayed than in the apparel used to protect the body.

It is not an agreeable task to peer into the wardrobes or dressing-rooms of our fair country-women. I have no special taste for exploring museums or bazaar collections. Indeed, without a key to interpret the curious and ingenious mechanisms for clothing the form divine, such an explanation would be like an archæologist attempting Egyptology ignorant of cuneiform inscriptions. I have, however, some knowledge of human anatomy in its broadest sense, and when I look upon the masterpieces of the human form, whether in marble or on canvas, a Belvidere, Apollo, or a Venus de Medici, and contrast these with the dressed-out specimens of modern women, I am forced to admiration, not so much at the amazing ingenuity displayed in concealing the divinely appointed form, as at the plasticity and patient submission of mortal clay under the despotism of a conventional inquisition. Were these processes of mutilation and abnormality harmless, did the body consist of a mere mass of protoplasm, capable, under the application of certain stimuli, of assuming normally protean shapes, the subject might be passed over with the feelings of a naturalist, but this is not so. These violations of the laws of structure bring with them serious penal inflictions, which, did they terminate with the original offender, might be dismissed with a sentiment of pity, but projecting, as they do, their baneful consequences to successors, they become proper subjects for criticism.

Let me name a few examples as illustrative of my subject: For some time the profession has been speculating on the causation of nasal and post-nasal catarrh, with its accompanying auditory defects, the growing frequency of which cannot have escaped general observation. Doubtless no single agency will explain the presence among us of this unpleasant disease, yet there are facts connected with this affection which, to me, are very suggestive. I cannot recall an instance in which I have met with the disease among females belonging to the Society of Friends, Dunkards, or Menonites. If this, on more extended observation, proves to be true, may not the head-dress peculiar to these people be accepted in explanation of their exemption? The bonnet which at one time overshadowed the entire head, as all know, has been gradually shrinking in its dimensions, until it has become a mere shadow of its former self, and offers no protection whatever to the head. As a substitute, I would not insist upon the quaint head-gear of the Friend, though I believe that any modification which will protect this part of the body will lessen the tendency to catarrhal inflammation of the naso-pharyngeal mucous membrane.

Muscular Restraint. — A legion of physical imperfections arises from muscular restraint. Among these may be mentioned weak ankles, narrow or contracted chests, round shoulders, projecting scapulæ, and lateral curvature of the spine. The foolish concession to appearance and the unwise partiality of parents for enforced education, the demands of which bear no just proportion to the capacity of the infantile mind, constitute the initial or determining force of these physical imperfections. In many cases the weak ankles of children, characterized by eversion of the feet, thus allowing the superincumbent weight of the body to be transmitted to the latter inside of the proper centre of support, is largely chargeable to the miserable practice of placing on the little ones, long before they are able to walk, boots tightly laced up the limb some distance above the ankles. The confinement of the flexor and extensor muscles by this constriction prevents that free play of movement which reacts so favorably on all the elements of an articulation, and that, too, at a time when the growing forces are at full tide, so that when the time arrives for standing and walking the muscles are unequal to the firm support of the joint. The consequence of this feebleness is soon seen in the turning outwards of the feet, throwing the strain on the internal lateral ligaments, which, in turn, become elongated through growth, and thus the defect becomes established. But the evil does not terminate here. The calcaneo-cuboid and the astragalo-scaphoid ligaments losing the proper support of the tendon of the posterior tibial muscle under the abnormal tension, begin to yield, and to the deformity of eversion is added that of "flat-foot." That the above is not a mere hypothetical explanation of the ankle defects, I have many times verified by finding the threatening symptoms disappear after liberating the imprisoned muscles and subjecting the enfeebled parts to a judicious massage. Under no circumstances, as is too often the case, should instrumental apparatus be applied, unless in cases where, from neglect, the deformity is thoroughly established and is progressive.

Take another deformity, that of bow-leg. On the earliest signs of the unsightly curve, the limb is too often tramelled with irons and the growth of the muscles arrested, when it is well known that if manual force be systematically applied two or three times a day, the limbs will gradually assume their typical form.

Again, in further illustration of our general text, take as an example a child who, for one long or two short sessions for six days of the week, sits over the study-desk, compelled to assume a position in which, from the inclination of the body, the shoulders fall forward, the head being supported most probably on the elbows and hands. In such a posture, the great serrati and pectoralis major and minor muscles are in a state of relaxation, while the erector spinæ and trapezei muscles are in a state of tension. This change in the posture of the shoulders gives the scapulæ over, without antagonism or resistance, to the action of the rhomboidei and the levatores angulæ scapulæ muscles, which, acting conjointly, cause that projection of the lower angles of the shoulder-blades which the older anatomists termed "scapulæ alatæ."

[1] The President's address, delivered September 18, 1888, before the American Surgical Association, Washington, D. C.

To all this must be added the very important factor of four to six hours in the school-room and two hours, at least, of home preparation for the following day's recitations, during which time the respiratory functions, having been reduced to a minimum of activity, the muscles of the chest are comparatively passive, and aëration of the blood tardy. Certainly, no combination of conditions could be better devised for forming contracted chests and round shoulders. It is not long before the watchful eye of the mother detects the change in the figure of her child. She will probably discover this and take alarm, even when the pale face, the languid air, and the capricious appetite of the child cause no anxiety; and then comes the second act in the drama of physical deterioration; namely, a resort to shoulder-braces and stays in order to accomplish that which the muscles should be taught to do without restraint or incumbrance.

Lateral Curvatures. — While it is true that lateral curvatures of the spine depend upon causes both central and peripheral, yet in no small number the deformity is clearly attributable to influences of a social nature. The young column, by reason of the non-union of the epiphysis and diaphysis, and the supple character of the ligaments, is extremely flexible. Whatever, therefore, destroys the muscular equipose, however inconsiderable the force, if persistently repeated, changes the centre of gravity, and develops primary and compensating curves. For six months in the year, any fine morning, groups of young children may be seen plodding along our streets with a miniature library of books suspended from one shoulder. To the already preponderating scale of the balance add the additional factor, a probably badly arranged light, compelling these little *savants* to assume a lateral inclination of the body in order to obtain the necessary illumination of the subjects of the study, and you have all of the conditions necessary for perpetuating the lateral deformity. "Just as the twig is bent the tree's inclined." As in the case of round shoulders, so here, in order to prop up the falling column, instrumental contrivances are immediately called into requisition. The body is incased in a formidable coat of mail, to be followed by muscular atrophy and permanent distortion of one of the otherwise most beautiful pieces of mechanism in the human frame. It is true that in most educational institutions for the young provisions are made for physical culture, and these are in some measure antidotal to the evils complained of, but, in my judgment, do not at all compensate for that free unstudied romp in the open air, untrammelled by the hard and fast rules of calisthenics, so fascinating to the young child. Nor does the evil end here. While the forcing process which is to stimulate the mental powers far beyond the real capacity of the immature and growing brain to receive is in progress, another is inaugurated which is to qualify especially the female child to acquit herself with distinction when the time arrives for entering the great world of society, or, as Thomas Brown would style it, "for the frivolous work of polished idleness." The gait and carriage must be reduced to prescribed rules, the voice trained down to a drawl, or trained to move like a mountain torrent. The muscular apparatus of the face must be taught to express, not the spontaneous and natural outflow of feeling which wells up unbidden from the magic chamber of the heart, but rather to produce an effect; and so this work of transformation goes on until it culminates in the full-blown society girl. Is it any wonder that under such a scheme of education, conducted throughout by a studied disregard of both the physical and mental constitution, and exercising as it does such tremendous drafts on the nervous system, that the world is becoming filled with a class of flat-breasted, spindle-limbed young women, unfitted for the varied and responsible duties of womanhood, qualifications, too, which under a different regimen and directed into proper channels would exert a most potential influence on all the great social and moral problems of the age.

While thus plain spoken on the frivolous methods of living, I do not wish to be understood as being unfriendly to the highest cultivation of the mental and physical powers, if conducted on lines in harmony with the organization, nor to any technique which may conduce to personal grace or elegance of manners, so that the manly or womanly personality of the individual be not sacrificed to the Moloch of sentiment and sham. Indeed, indifference to these things is inexcusable in either man or woman as not only lessening their influence in the world, but in many respects disqualifying them for the highest discharge of the duties of modern life. Valuable as may be the unpolished diamond, yet it is only after the wheel of the lapidary has worn away the dull incrustations that its true brilliancy is revealed, and the gem is fitted to adorn the brow or the breast of beauty.

Bodily Constriction.—In the further discussion of my subject, I may next notice the evils of visceral displacement and pressure, consequent on abdominal constriction. Whatever may be said in regard to Greek and Roman life, the infinite care which these people displayed in developing and maintaining the very best type of the human form is worthy of admiration. The Ionic "chiton" spoken of by Attic writers, and so often represented in the bronzes of Herculaneum, while it would not exactly satisfy the modern idea of dress, was at least free from the charge of interfering with contour of the human figure. The painters and sculptors of those classic days were reverent students of nature. Their delineations were true to life. Their works furnish us with no hour-glass constructions of the human body. The constriction of the waist operates injuriously on both the supra and infra diaphragmatic organs. Any force acting on the base of the thorax, and preventing the expansion of its walls, concentrates the function of respiration; which should be general on the apices of the lungs, and hence, under these circumstances, the movements of breathing are for the most part confined to the summit of the chest. As the initial seat of tuberculosis is located at the upper part of the lungs, may not the inordinate work entailed on these parts by constriction have some part in hastening such deposits in the female where the predisposition exists? It is this forcing inwards of the costal border of the thorax which causes the groove on the anterior surface of the liver so familiar to anatomists. This pressure cannot fail to interfere with the descent of the diaphragm and with the functions of the gall bladder and duodenum, and exercises no small degree of influence in favoring the formation of biliary calculi, females being peculiarly prone to such concretions.

The extent to which the liver may be damaged by extreme constriction of the waist, is well illustrated by a case quite recently reported in the *British Medical*

Journal in which a considerable portion of the left lobe of the liver had been separated from the right, the two being connected only by a band of connective tissue, and which enabled the operator to remove the detached mass without difficulty. The evil effects of this constriction on the viscera of the abdomen and pelvis is most strikingly witnessed in the embarrassed portal circulation, in the different uterine displacements, elongation of ligaments, displaced ovaries, tubal inflammations, hemorrhoids, hernia and other morbid conditions which either prevent or disqualify the woman for the exercise of those functions of maternity, and which in addition, through reflex influences, entail a host of functional disorders reaching into every avenue of the body and invading both the mental and moral constitution of the victim. So prolific have these infirmities become that a new department of surgery has been organized for their special management. To what, if not to social causes, can these morbid changes of structure in the pelvic organs, especially of the uterus and its appendages, be attributed? Why should laceration of the cervix uteri be so common an accident? Labor is a natural process and ought not under ordinary circumstances be attended by lesion of uterine tissue. I can conceive of no agency more likely to induce that muscular degeneration which predisposes to this accident than the modes and methods of modern living especially among the inhabitants of great cities. In the expression "modern living," much is embraced. It includes culinary pharmacy, over-feeding and drinking, insufficient or injudicious exercise, improperly heated apartments and a disproportion between the hours of exercise and rest. Contrast if you will the muscles of the hardy, country house-wife, who bearing the cares and responsibilities of a dependent family bustles about the live-long day in and out of doors, eats with a relish her plain and simple fare, repairs at seasonable hours to bed, and sleeps the sleep of the beloved, undisturbed by dyspeptic night-mare, and rising with the golden dawn resumes the round of domestic toil with a clear head and supple limbs. I say contrast this type of a class with that of another, the woman born to luxury and ease whose capricious and exacting taste taxes the art of the professional caterer, who drags out the morning hours toying with some crazy piece of embroidery or trashy novel, lunches at one, rides out in the afternoon for an airing of two or three hours, returns to a dinner of five or six courses at seven, completes the evening at the opera, the theatre or the assembly, and coming home after midnight, crawls into bed weary and exhausted in body and mind, only to rise with the best hours of the morning gone, for another day of aimless routine life. Can it be doubted that in the first case, with a digestion unimpaired, with the products of textural change consumed by functional activity and eliminated through the proper emunctories, the woman should possess a vital resistance and a tone of tissue altogether superior to that of the other, whose habits of living must necessarily favor their faulty metamorphosis?

To these same agencies must be attributed that brood of nervous and hysterical evils, for the relief of which the gynæcologist, too often I fear invades the domain of womanhood, around which her whole sexual nature revolves, and which, save only in the direst extremity, should be sacred against all operative intrusion.

Late Marriages constitutes another social evil, the penal inflictions of which involves both sexes alike. Pride and luxury determine long engagements or deferred proposals. Marriage, it is believed, necessarily involves an establishment, a display, a retinue of servitors. The good old notion of two souls being united in wedlock for the purpose of being mutual helpmates, and patiently together working up from modest beginnings to affluence, seems to be entirely at varience with the modern idea of this relation. In the meantime the young man is betrayed into unlawful sources of gratification, alike destructive to moral and physical purity, the pollution of which incontinence is often subsequently communicated and perpetuated to wife and offspring. I would not dare to say how many cases of this nature have been entrusted to my professional confidence, though I doubt not my experience does not differ from that of many of my professional brethren whom I address. It is under such circumstances that many of those infective inflammations of the fallopian tubes as salpingitis and pyo-salpinx arise and which entail the most serious deterioration of health.

The Foot and the Shoe.— It may be thought by some persons that the subject of the foot and the shoe is not of sufficient dignity to appear in a public address. The Romans and the Greeks thought differently. The literature of both people is full of references to the shoe worn by both sexes. So important, indeed, are the feet to the well-being of the body, that whatever impairs their usefulness, either for support or locomotion, becomes a positive calamity. Nothing can be more unlike the human foot than the modern shoe. Let any one leave the impress of his or her foot in the wet sand of the sea-shore and then place alongside of the imprint of a fashionable shoe; that the two were ever intended for each other would scarcely strike a child of the forests. The North American Indian entertains juster notions about clothing this portion of his body than does the civilized denizen of New York or Philadelphia. Compare the moccasin with the shoe of the city belle. Compare the *σανδάλιον* or the *πέδιλον* of Pollux and of Aristophanes with the same, and we shall see that the savage and the polished Greek alike understood the value of sound feet in the race of life. It is the imperfect adaptation of the shoe to the foot which constitutes the fruitful source of tired ankles, corns, bunyons, overlapping of the toes and ingrowing nails. Some idea may be formed of the magnitude of the evil from the fact that of eight hundred patients under the care of a prominent chiropodist of Philadelphia, the great majority of the defects were entirely attributable to the high heels and the contracted toes of the shoes. Especially do these physical encumbrances arising from a blind submission to social laws, operate disadvantageously to our fair women at the beginning of the new dispensation requiring both muscles and brains, and when her friends propose to sweep away all the old traditions and claim for her the earth, with all its masculine employments.

Games and amusements which in themselves are proper and praiseworthy, too often become developed into a craze, working both moral and physical mischief. Professor Leuf, himself a professional in the national game of base ball, has described the pitcher's arm, a condition of over-taxed function, and one in which all the anatomical elements of the upper arm are involved. There is also the tennis arm and the

swollen supersensitive prostate of the bicyclist, both due to the abuse of popular amusements.

Defects of refraction or visual defects, constitute another class of affections fairly attributable in many instances, to social influences. The number of children which may be seen in our streets any day, wearing glasses, has become a matter of common observation. It is far from being probable that the most exquisite piece of mechanism, the human eye, came from the Divine Artificer, imperfect. Because eyes are young it does not follow that they are thereby better fitted to sustain prolonged use. Just the reverse is true, and it is high time that parents and educators began to recognize the fact. The power of the eyes for continued use like that of other organs of the body, is one of gradation. It moves in the general procession and strengthens with the advance in life until development has attained to its zenith. Not only so, but the eye being a part of the body, it must suffer or rejoice through the operation of general causes. A bone may have its normal curves changed, a tendon may slip from its appointed groove, or a bloodvessel be destroyed, and yet very little disability be realized; but the eye is made up of such extremely delicate structures and acts according to fixed physical laws, so that not the slightest alteration of a curve or the mobility or density of its media can occur, without great vitiation of function. To exact, therefore, long hours of study from children of a tender age, involves a degree of functional strain, altogether disproportionate to the structural resources of the organ, and by disturbing the orderly processes of nutrition, give rise to hypermetropia, asthenopia, astigmatism, and its companion headache. That the picture is not too highly colored or the causation overstrained, we have only to contrast the children born and reared in those portions of the country not too much dominated by the methods of modern civilization, and who rarely demand a resort to artificial aid to provide for abnormalities of vision. The only remedy for the evil where infantile scholarship is insisted upon, is the Kindergarten or object system, the most natural and effective plan of impressing the young mind.

Renal Disease.—Is there any reasonable explanation drawn from sources of a social nature for the great frequency of those renal disorders which come more particularly under the care of the surgeon as crystaline deposits and calculi? For maintaining the general health at the highest physiological standard, a proper quality of food and the proper disposal of tissue waste are essential conditions. Along with wealth and luxury come the abuses of the table. Americans are fast becoming a nation of dyspeptics. Our country is so rich in the products of every zone that nowhere else in the world can you find such a variety of foods, animal and vegetable. These foods, manipulated in a thousand ways by the subtle art of the professional cook, almost necessarily betray one into excess, and also create the desire for wines and other alcoholic beverages to aid the stomach in disposing of its plethoric supply. In great cities, which furnish relatively the largest number of cases of renal disease, affecting preëminently the mercantile and sedentary classes, we find just the conditions favorable to their development. The competitions of trade keep the merchant always at white heat. Time is golden, and the street car and other means of conveyances annihilate distance, and the ride is substituted for the needful walk. A hasty lunch at the most convenient restaurant satisfies the inner man until the business of the day is closed, when, weary and worn, he is driven to his home to partake of a course dinner, the balance of the evening to be spent on the lounge with the evening paper or the latest periodical. As for the literary man, the fascinations of the study and the library charm him away with their siren voices from the fields and the highways until bodily exercise grows distasteful and repugnant. In the meantime there has been no provision made for the waste or tissue metamorphoses of the body through that great agency, exercise. These accumulate in the blood, the internal eliminating organs of which the kidneys are chief, are overtaxed; and then follows the evils of malassimilation and of excretion in the form of urates and oxalates, often resulting in the formation of calculi.

In conclusion, may we ever hope for a time when the race will realize that these bodies which we wear, which God has so highly honored by his own incarnation, are sacred temples to be kept in harmony with recognized physical laws, and not to be made instruments of mere animal gratification.

Original Articles.

CASES OF CEREBRAL TUMOR.[1]

BY S. G. WEBBER, M.D., ADAMS NERVINE ASYLUM.

The following cases illustrate the various phases of cerebral tumor. In two the general symptoms, preceding the more local, are such as usually accompany cerebral tumor. They are more frequently due to the remoter effects of the tumor, to pressure, to disturbance of circulation, to irritation and reflex influences. Headache is the most common of these general symptoms. It is rarely absent: but, as in two of the cases reported, it may not precede the more local symptoms. In the first case the pain in the head was excessive. It is often less severe than in this instance. Probably the locality and severity of the headache depends upon the situation of the tumor and the rapidity of its growth. We do not know if the pain is due to pressure upon the membranes through which the nerves pass, or upon inflammatory changes causing the cerebral substance itself to become sensitive. When the pain is not definitely localized in a small area, but is spread quite generally over one side or the whole of the head, and when it radiates to neighboring regions, as face and neck, it is probable that the tumor presses upon branches of the fifth nerve, which are found in the dura mater.

The growth of tumors causes a change in pressure, the irritation is greatest at another place, the circulation again is affected differently, therefore the headache varies, or may cease for a while.

Of sensory disturbances other than headache, there may be pains in the limbs, a sensation of numbness or of formication, an oversensitiveness to certain impressions, or to all impressions, upon the surface, or an increased acuteness of special senses. Sometimes the hyperæsthesia or anæsthesia is unilateral, and becomes then rather a localizing symptom. It will be seen that our patients had more or less disturbance of general sensation.

[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District of the Massachusetts Medical Society, on the occasion of the annual meeting of the State Society, June 11, 1888.

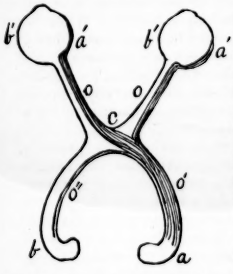
Dizziness, staggering and general weakness, or weariness, are the more common general motor symptoms. It is not possible to connect these with any particular seat of the tumor, though when severe they may give rise to suspicion of diseases of cerebellum or the peduncles of the brain. These symptoms are not always very decided. There may be merely a slight sense of unstable equilibrium on change of position from reclining to upright, or the reverse. The weakness may be simply a sense of general weariness, a feeling of inability to walk as far or do as hard work as formerly.

Variations in the superficial and the deep reflexes are quite common in cerebral tumor. Perhaps these are in a measure localizing, as they are present on the same side with the paralysis, if that exists.

Mental disturbance belongs to the general symptoms. It was present in these cases in various degrees, from simple habitude to decided dulness, loss of memory and unconsciousness. It is difficult to decide whether the attacks of unconsciousness in the first case were due to the general or diffused influence of the tumor, or were not due to local disturbances. As the disease progressed the mental dulness was marked in all the cases. I think there was no insanity in any of them, yet this is sometimes clearly marked as dependent upon a tumor of the brain.

Vomiting is rather common. When present it is a valuable symptom. It is sometimes very obstinate, resisting all treatment or means to alleviate it. It is most common in tumors affecting the medullar and cerebellum, especially the middle lobe. There may be nausea without vomiting.

Optic neuritis is a very valuable symptom for diagnosis. If the other symptoms are obscure, if there is doubt as to their importance, and it seems impossible for such slight disturbances to signify so grave a change, the ophthalmoscope may decide the question. If optic neuritis is present the most trifling symptoms acquire an immense importance. The neuritis may be absent, but if present it is not to be underestimated. In some of my cases the other symptoms so decidedly pointed to tumor, and the patient was in such a condition the ophthalmoscope was not used.



Besides the general symptoms which are common to most cases of tumor of the brain, and have no localizing value, one symptom which is of importance in the diagnosis of the situation of the tumor is found in three of the following cases. I refer to hæmianopsia. In two of the cases there was homonymous lateral hæmianopsia, and in one case this was double, giving rise to total blindness.

The fibres of the optic nerve partially decussate in the optic chiasma (c); so that those passing from the right side of the brain (a) supply the right half of each eye (a' a'). The rays of light from an object to the left of the median line will fall on the right half of each retina, and the impressions thus produced will be carried through the optic nerves (o, o) and the right optic (o') tract to the right side of the brain (a.) Any destructive lesion, therefore, of the optic tract or the nerve centres on the right behind the optic chiasma will cause loss of vision for objects to the left of the patient. This is left homonymous lateral hemianopsia. If there is paralysis due to the same lesion, the loss of vision affects that half of the field of vision which corresponds with the side of the body which is paralyzed.

The word hemianopia is used with reference to the loss of function in the retina. Hemianopsia is used with reference to the field of vision; therefore, as the rays of light cross from right to left after entering the eye, right hemianopsia corresponds to left hemianopia. American authors seem to prefer hemianopsia. Most English authors, except Ross, use hemianopia.

Hemianopsia may be caused by lesion of one optic tract behind the chasm. It is also caused by lesion of the external corpus geniculatum, the anterior corpus quadrigeminum, that portion of the optic thalamus called the pulvinar, and the cuneus in the occipital lobe.

The first case is of interest on account of the disturbance of sight. It is a case of right lateral hemianopsia due to lesion of the left optic thalamus. The disturbance of speech is not explained by the lesions found. The disturbance of sensation, anæsthesia with analgesia, and the partial loss of motor power, were probably caused by pressure of the tumor upon the posterior part of the internal capsule. It is quite possible that the tumor may have implicated the sensory tract in that portion of the internal capsule. The deafness may have been caused by the lesion of the above sensory region, otherwise it is not explained by the autopsy. The fact that the loss of sight increased, the left eye became entirely blind, the right nearly so, would be reason for considering the left optic thalamus as the original seat of the tumor, and as it increased in size it extended to the right optic thalamus and the right anterior corpus quadrigemium.

It is to be regretted that Dr. Gannett did not receive the brain in a more perfect condition, but the examination he was able to make is well described, and nothing has been assumed beyond that which the brain showed.

CASE I. Headache, attacks of unconsciousness, right hemiplegia, right hemianopsia, right hemianæsthesia, with hyperalgesia, disturbance of speech, left amblyopia; tumor in region of optic thalmi and corpora quadrigemina.

C. M., aged thirty-two, seen in April, 1882, was said to have had headache for many years, sometimes very severe, so that he would walk the floor groaning; between these severe attacks, which recurred once in three or four weeks, his head would be easier, but not entirely free. He had always drank more or less spirit, and at the time his illness began, in September, he had drank more than usual. In September he complained of being unusually tired and weary, and was restless at night, waking often and complaining of being tired. Some weeks later, perhaps in November, he had attacks of loss of consciousness, generally once a day; these continued till about January. During this time he had trouble with his head, rather different from his former disturbance. After November, exactly the date was not remembered, he complained of numbness in his right foot, and later, in his right hand. This numbness increased, and gradually he lost skill in the use of his limbs, wrote poorly, so that

his hand-writing was scarcely legible. In January the attacks of unconsciousness ceased, and in their stead he had distressed spells. One of the attacks of unconsciousness was seen by his physician. Mr. M. said he was about to have an attack; his eyes changed their expression, and he soon slowly rotated his head to one side, then to the other, then began to swallow; this continued two or three minutes. He then sighed, and soon after recovered consciousness; was slightly confused; had no increase of distress in head afterwards. After January the attacks were without loss of consciousness, there being simply general distress, during which he did not wish to be touched; his wife said he looked as if he were about to die. He had from three to six a day. Six weeks before he was seen, one of these attacks was so severe he was put to bed; he did not get up again to stay up. At that time he had lost most of the motor power in his right arm and leg; he could walk only with difficulty; said he was dizzy, but seemed to stagger from weakness of the right leg, rather than from vertigo. After he was confined to bed, during the six weeks, he was much of the time free from headache, had only two or three severe attacks, and for four or five weeks had had no attacks of distress. Just before he took to his bed he began to have right lateral hemianopsia, vision being lost for objects on the right of the median line. During the six weeks the strength in his right leg did not vary much. It could be moved a little; the right arm varied, some days being moved better than on others.

His wife said that, even early in the disease, he had trouble in talking, using the wrong words, miscalling the names of his friends, and sometimes he was scarcely to be understood. When he wished to have the right arm moved, he asked his wife to bring him the fly-paper and put it on the bed. At times he swallowed slowly. Bowels generally regular, but for a few days he had had small involuntary motions. Micturition was normal.

When seen the right pupil was larger than the left, but both reacted to light; the right eye opened wider than the left, and did not quite close; both eyes moved naturally. There was loss of vision for objects to the right of the patient in both eyes — right lateral hemianopsia; there was partial facial paralysis on the right. The tongue protruded straight; he swallowed without trouble. His right hand was almost motionless, though he could close the fingers when flexing the arm. There was no contraction; the right leg could be moved and raised from the bed, but less strongly than the left. Sensation was diminished throughout the right side, but there was hyperæsthesia to pricking, scratching and pinching, the sensation being very unpleasant. Hearing was much diminished on the right. The plantar, cremaster, and abdominal cutaneous reflexes were absent on the right, well marked on the left. Tendon reflex was well marked, perhaps rather exaggerated on both sides. Ankle clonus was well marked on the right, absent on the left. There was no tremor. The ophthalmoscope showed the arteries small, the veins large, but the discs were not essentially changed from normal. The pulse was 84, small, and feeble; the heart-sounds faint; no murmur.

About a month later the report was that he mixed names more; speech had somewhat improved. He had had pain in the left temple, had had photophobia in a bright light, had been entirely blind in the left eye, had great general hyperæsthesia.

June 5th. He had sinking spells, panting for breath. This lasted long, intelligence diminished constantly, and he took less notice of his surroundings. The left eye was totally blind, and vision in the right eye was dull.

June 10th. Coma, which deepened, and from the 12th he showed no sign of consciousness. He could not swallow. There was no marked paralysis of the upper branches of the seventh nerve, no conjugate deviation of the eyes; the paralysis was not changed, except to become more complete. As he passed into coma, the temperature rose to 103°, and a short time before death it was 102+°; the pulse was 160 or more, very feeble.

An autopsy was made by a neighboring physician, and the brain was sent to Dr. W. W. Gannett, who has furnished the following description: The brain "was rather soft, but still in sufficiently good condition to enable one to say that the cortex and white matter, as well as the membranes, were in a normal condition so far as gross appearances were concerned. The interesting portion was the basal region, but this, unfortunately, had been cut so irregularly that it was very difficult to get the exact relation of the parts. Putting the parts together as well as I could, the condition was about as follows: The posterior inferior part of the right optic thalamus in the immediate neighborhood of the corpora quadrigemina was occupied by a nodule about the size of a filbert meat, of a red color and rather soft consistency. The anterior corpus quadrigeminum on the right was probably implicated. This nodule was shown in section, on a cut which had been made antero-posteriorly and vertically about the middle of the pons. What I take to be the left optic thalamus was occupied through its whole middle and posterior portion by a red, soft mass, like that seen in the right thalamus, and which was probably continuous with the latter. Altogether, the mass must have been the size of a small plum.

"On microscopic examination, the nodule was found to be made up of medium and large-sized cells, with single, well-marked nuclei; the form of the cells was either a long oval or spindle shape. They were exceedingly numerous, lying in close contact, and no interstitial substance could be made out. There was an abundant development of large and small bloodvessels, and also evidence of earlier small hæmorrhages into the mass. The mass represents a sarcoma of a very vascular variety, and, judging from the appearance of the cells, I should say of a tolerably rapid growth.

The second case is remarkable for the large number of tumors in the brain substance. Thirty-two were counted and most of these located, varying in size from the sixteenth of an inch to an inch and three-quarters in diameter. It is useless to refer special symptoms to any one tumor, yet it is of interest to note, in relation to the loss of sight that both occipital lobes contained rather large tumors; and on the left the internal capsule may have been injured in its motor tract, either by pressure or by the destruction of its fibres by one of the growths.

As in other cases of melanotic growths the tumors were found in other organs, the bronchial glands, mesenteric glands and in the intestines.

Case II. ——, aged thirty-two, had enjoyed perfect

health so far as known by himself and friends, until about eight years ago, when he had rheumatic fever, from which he fully recovered. October 19, 1881, he first noticed slight dimness of vision with pain in his eyes, which was increased by any attempt to use them. About two weeks later he felt pain in the back of his head and neck, from which he suffered more or less until about the first of December; the pain then abated leaving a feeling of distress in the same region. He was unable to fix his mind on any subject or follow out any train of thought, was easily fatigued, unsteady in his gait, and complained of a general feeling of weariness and weakness of the legs.

About the first of December his left eye was seriously affected, the right was less so; this was supposed to be due to partial loss of accommodation. About the middle of December he began to have attacks of vomiting without nausea; these recurred once in four or five days until January 27th, when Dr. Gilbert was called to see him, he having vomited fifteen or twenty times. He had then practically lost the sight of his left eye, and the field of vision was quite limited in the right. His mind was clear but weak, he then suffered no pain; temperature and respiration were normal, pulse 65. During the afternoon an attack of singultus began which continued about twenty-four hours; similar attacks recurred at intervals during the next three weeks, but less violent. The urine was normal, contained neither albumen nor casts.

During a part of December and January he was obliged to keep his bed, during a part he was up and even went out to ride; he had difficulty in walking, staggering.

I saw him January 29, 1882. At times his speech was defective; his headache less intense, but from the motion of his head and from his putting his hand to his head, it was probable that he still had some discomfort. He talked with difficulty, was languid and apathetic.

The left eye was a little more prominent than the right, there was a slight nystagmus, the face showed a slight loss of tone on the right, though there was no paralysis; the eyelids closed well on both sides, the tongue was protruded straight. The right arm and leg were weaker than the left. He staggered on standing and required support. There was extensive hæmorrhagic retinitis in both eyes, the discs being obscured and the vessels showing only in a part of their course; there was not much difference between the two eyes.

The diagnosis was tumor, probably in the cerebellum, and it was thought most probable that the middle lobe was involved and that there was pressure upon the left side of the medulla oblongata.

Mercurials and iodide of potassium were given and he improved for about a week, he then vomited and was much worse for a few days; with slight remissions and occasional exacerbations he grew steadily worse till he died.

About February 5th or 6th he became totally blind. February 17th and 18th he was nearly if not quite unconscious, breathing was labored, he took no food and could scarcely be aroused sufficiently to swallow a few spoonfuls of water. On the evening of the 18th he began to improve, slept well that night and the next day was quite rational and talked much. On February 15th, he began to pass his urine involuntarily. February 21st his hearing began to fail, and after a little he became totally deaf. On the 24th he had another ill turn, was unable to swallow, scarcely moved his right side; his head was turned to the left and his eyes were directed upward and to the left, the pupils widely dilated, the left more than the right, there was slight divergent strabismus. He was quite unconscious, breathing heavily and irregularly. In the evening he began to regain consciousness and for the next three days was brighter, especially in the morning. February 25th he talked much, but was so deaf that it was very difficult to make him hear. He sweat profusely for two hours. There was almost complete anæsthesia of the right cheek, the sensitiveness of the left was much diminished, but he was quite sensitive about the lips and eyes. Temperature and respiration were about normal, pulse varied from 65 to 72. After this for three or four days he was more conscious, talked considerably, relished his food, slept much of the time. For ten days he again was nearly unconscious, noticed nothing, the conjugate deviation of head and eyes mentioned above still persisted, there was nystagmus, the eyes did not, however, pass to the right of the median line. March 17th to April 3d he was again partially conscious, seeing and hearing nothing, he knew no one and imagined himself away from home. Smell and taste were very acute, he was aware that he was blind, but did not realize that he was totally deaf.

He had another febrile attack with increasing stupor, pulse running up to 160, respiration 56, and temperature 101°. From this he revived, pulse going down to 76, respiration and temperature to normal, and he again talked much. At this time the head and eyes, instead of being turned persistently toward the left, as they had been for weeks, resumed their normal position and action, the pupils were still largely dilated, and the right more so than the left. This condition continued for thirty-six hours, when they were again turned towards the left and remained so till death; the pupils varying, generally dilated. April 17th he began to fail again, and May 5th he died.

Autopsy. Body very much emaciated; skull very thin, inner table very rough with many sharp spiculæ projecting inwards, there was scarcely any diploe, and in several places there was entire absorption of the inner table. The veins of the dura mater were quite full. Pachionian bodies moderately prominent; there was a soft clot in the longitudinal sinus; veins of the pia mater were very much distended. On both sides of the longitudinal fissure just anterior to the fissure of Rolando, the pia mater was thickened and yellowish-white in color. This on being removed did not bring with it any cortical substance. The convolutions were well filled and the sulci not prominent as seen through the pia mater.

Throughout the substance of the brain were scattered a large number of small tumors, of a dark, almost black color, but on section somewhat mottled, if large, irregularly lobulated. Under the microscope these were seen to be composed of round, fusiform or candate cells, rather small, generally filled with pigment, only loosely connected together by a very small amount of connective tissue, the masses were very rich in bloodvessels.

The locality of these tumors was as follows: In the left hemisphere, directly opposite the extremity of the fissure of Sylvius on the surface of the supra-marginal

gyrus, was one three-quarters of an inch in diameter; just at the point where the perpendicular fissure comes to the upper convex surface was one lying rather deep, and nearly concealed by the overlying brain substance; in the longitudinal fissure posterior to the perpendicular fissure was one one-fourth inch in diameter; at the extreme end of the occipital lobe, on the under surface near median fissure, was one with a lobular conformation one and one-half to one and three-fourths inches in diameter; around this the cerebral tissue was more softened than elsewhere; near the middle of the parietal convolution was one three-fourths inch in diameter, covered by cerebral tissue; near the junction of the second and third temporal convolutions, in the third and near its middle longitudinally, was one about one-fourth inch in diameter; just to the left anterior part of the left olfactory nerve was one one-fourth inch in diameter; under this nerve was a very small one one-sixteenth inch in diameter. In the right hemisphere, within the median fissure in the occipital lobe, was one nearly an inch in diameter; a little below this, at the extreme posterior extremity of the occipital lobe, three-quarters of an inch from the under surface, was one three-fourths inch in diameter; on the under surface, near the tentorium, there were two, each about one-fourth inch in diameter; a small tumor, one-sixteenth inch in diameter, was in the pineal gland.

The membranes in the fissure of Sylvius and around the optic chiasm were rather thickened and matted together. The bloodvessels at the base were pervious and healthy.

Scattered through the interior of the right hemispheres from vertex to the level of the lateral ventricle there were ten tumors, varying from one-twelfth to one-half inch in diameter. On the left side in the same region there were six. On the right side, in posterior part of the tail of the caudate nucleus, projecting slightly into the lateral ventricle, but covered by a thin layer of cerebral tissue, was a tumor one-half inch in diameter; the surrounding cerebral tissue was softened. In the anterior portion of the lenticular nucleus, near its upper surface, extending across the external capsule to the claustrum, was one one-half inch in diameter. On the left side, about the centre of the caudate nucleus, projecting into the internal capsule, was one one-half inch in diameter; rather above this, in the lenticular nucleus, was one one-eighth inch in diameter. On right side, in middle of cerebellar peduncle, just above the point of exit of the fifth nerve, was one one-half inch in diameter; in the left lobe of the cerebellum, near its outer surface, were two, one below, the other above, both one-half inch in diameter. The right lobe was free.

The base of the skull presented a similar appearance to the calvarium in roughness and absorption of inner plate.

Thorax: pericardium was universally adherent; the two pleural cavities contained about six ounces of clear fluid. The left lung was healthy, but at the base, near the entrance of the bronchus, a bronchial gland presented a melanotic appearance. The lower lobe of the right lung was solidified in its posterior part; contained no air. Heart and its valves were healthy; the right cavity contained soft coagula. Walls of the heart were very firm.

Abdomen: liver and spleen were both abnormally small and firm, the latter measuring two by one and one-half by one-half inches. Kidneys were small, but healthy. Stomach presented only post-mortem changes. Some of the mesenteric glands were enlarged, and, on section, had a dark color, resembling the tumors found in the brain. About a foot below the stomach was an invagination of the intestine, estimated to be about ten inches long, and about a foot below this was another about six inches long. There was no swelling and no marked congestion around these invaginations. In the shorter portion of intestine thus invaginated was a small, pedunculated, melanotic tumor, about one-half inch in diameter.

In the third case there was left hemianopsia. The left hand showed great loss of coördination. Gowers has given a drawing of a tumor just beneath the corpora quadrigemina, which he considers was the cause of a similar incoördination. This locality would explain the hemianopsia, and also the paralysis of the motor nerves of the eye.

The spasm of the right arm was described as if of cortical origin; it was a simple case of monospasm. The seat of the lesion causing this spasm must have been in the cerebral hemisphere, not in the mesencephalon, for there was conjugate deviation of the head and eyes to the right, towards the side affected with spasm. The law in regard to conjugate deviation is that in lesion of the hemispheres the deviation is toward the affected hemisphere in paralysis; as it has been said, the patient seems to be trying to look at the injury. In spasm the deviation is towards the unaffected hemisphere, towards the limbs which are convulsed.

If, then, the report given me of the side affected with spasm was correct, and I think it was, there must have been two centres of disturbance: one in the cortical motor centre for the arm on the right, which was not sufficient to cause paralysis; a second in the vicinity of the anterior corpus quadrigeminum and pulvinar, giving rise to the other symptoms.

As there was the history of former tubercular disturbance in the lung, it is probable the lesion was tubercular, and we know that such tumors in the brain may be multiple. There was no autopsy to confirm this diagnosis.

Case III. Mrs. W. was seen with Dr. J. W. Willis. Her former physician said that she had lung trouble, and this opinion was confirmed by Dr. E. H. Clarke. She went to California, where she seemed to have recovered, and recently the lungs had given her no trouble.

She was married December, 1881. In February or April, 1882, she had a spasm of the right arm, which drew up. Then she lost consciousness. There was no other spasm until April, 1887, then in May, and on July 31st of the same year she had other spasms of the right arm. She saw the arm draw up, there was a sensation as if the fingers were being torn out, then she lost consciousness. She bit her tongue and her head turned to the right, and her eyes to the right. There was conjugate deviation of head and eyes to the right. She was very nervous lest she should have another attack.

After July, 1887, she took less interest in what occurred about her. Her mental condition changed in a way that it was difficult to describe. She was rather apethetic, indifferent to her surroundings, and this condition grew gradually more marked.

About Thanksgiving she had headache. She did not have this previously. The pain became more in-

tense. She was dizzy, was weak during two or three weeks before I saw her. During the previous two days there was diplopia.

When seen there was external strabismus, the notes do not say of which eye. The left side of the face acted less readily than the right, the left eye was more widely open, and the left pupil responded less readily to light. The tongue was protruded straight. Hearing was seemingly less acute on the left, but at times she was not easily aroused, and the observation might not have been accurate on that account. There was left hemianopsia, the line of demarcation passing through nearly the centre of the visual field.

The grasp of the hands seemed about equal on the two sides; but there was great loss of co-ordination on the left, that hand moving in a very disorderly way when an attempt was made to touch the nose with the eyes shut. Sensation seemed equal on the two sides. The superficial and deep reflexes of the legs were equal on the two sides.

The next case is allied to the last by the spasm. It differs from the two previous cases in there being no disturbance of sight, and it is probably not a case of tumor. Fortunately, the improvement has been so great that there is no probability of death at present.

This is a typical case of localized irritative lesion of the cortical motor centre, progressing to partial destruction, or at least abolition of function, with subsequent recovery. The gradual extension of the pathological process from the centre for the feet near the median fissure, down both sides of the central fissure, as the arm and body, then neck and face became involved, can be distinctly recognized by the extension of the symptoms to those parts of the limbs and body.

The improvement is encouraging and instructive. Having decided as to the locality and probable nature of a lesion and the possibility of relief, we should persistently follow the course indicated even when there is seemingly no immediate gain. In one other similar case I have found benefit from large doses of iodide of potassium and mercury where it seemed that death must be close at hand. The spasms, beginning in the face and extending to the arm, then to the leg, recurred every three minutes for many hours. The patient recovered from that attack, but subsequently died.

CASE IV. Miss H. was seen early in November. She was past the climateric. She had fairly good health until four years previous to visit, when she had some anxiety about one of the family. The first disturbance to attract attention was a twitching of the left leg; then she became unconscious. Her head and eyes were turned to the left (left conjugate deviation of head and eyes).

For a long time, how long was not known, there was no symptom, then she had at times a slight drawing sensation in the left ankle. Later this extended to the left leg, then to the left thigh. At times the left leg moved spasmodically. There was at these times no loss of consciousness, no pain, no loss of sensation. The phenomenon was purely motor.

Still later the same spasm affected the left arm, and recently the left side of body and the left side of neck and face. There were no general convulsions. Lately there had been pain in the left leg, a heavy aching, though sometimes severe pain. There was also some numbness.

The left hand and arm had always been smaller than the right. The left leg was one-eighth inch smaller round than the right. The patellar tendon reflex was the same on both sides. Sensation was about the same on both sides.

She could not use her left hand readily. She dragged her left leg, and walked lame. The eye, pupils, tongue and face moved naturally. She was intelligent. Her mind seemed fairly active.

The diagnosis was clearly some irritation of the motor centres in the cortex. The symptoms did not point to a tumor. There were none of the general symptoms of tumor present. A localized chronic meningitis would explain the symptoms. Acting on this theory I advised iodide of potassium in large doses, with moderate doses of bromide of potassium.

Dr. Julia Tolman took charge of the patient, and I am indebted to her for the subsequent history of the case.

After nearly four weeks the pain was less, sleep was better, the spasms of wrists and ankles, which had recurred frequently, had ceased. There was much more loss of power in the arm and leg. The patient stumbled often in walking, and had more difficulty in raising her foot from the floor. She could not raise her hand to her neck. The patient was at that time taking twenty-five grains of iodide potassium and twenty grains bromide of potassium three times a day. Her friends objected to her taking large doses because they were afraid the loss of power might be caused by the medicine. Yet they had been expressly warned that the disease would lead to such loss of power.

A short time after a slight œdema of the legs appeared, but the urine was free from albumen. Iodide of mercury was given for a short time with the iodide potassium. Fifty-three grains three times a day of the latter seemed to slightly disturb the stomach, so the amount was reduced to thirty-five grains.

About two months after she was first seen the paralysis was steadily increasing. There was no pain. The mind seemed less clear. Sometimes she seemed rather stupid.

In February she began to improve. Could use her hand a trifle better, could walk better. She had grown stouter. Her general health was good. At that time she was taking from forty-five to fifty-three grains of the iodide and fifteen of the bromide three times a day.

Towards the end of May the report is very favorable. There had been a decided improvement during the previous two months. She could walk fairly well without support, dragging the left foot a little. The hand, which was for a time absolutely powerless, could be extended and flexed a little, and raised nearly to her shoulder. A feeling of constriction about the waist, distension of bowels and incontinence of urine, which had been somewhat troublesome, had entirely disappeared. She still continued forty five to fifty grains of the iodide of potassium.

— Professor Billroth, who led the opposition, a few years ago, to the admission of women to the continental medical schools, has created something of a sensation in Vienna, it is reported, by having Dr. Grace Wolcott and three other American women physicians repeatedly in attendance at his private clinic lately, to witness his own operations. — *Med. and Surg. Reporter.*

REPORT ON PROGRESS IN SURGERY.[1]

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

LAPAROTOMY FOR ACUTE INTESTINAL OBSTRUCTION, WITH ABSTRACTS OF 69 CASES.

ROCKWELL [18] has made a careful analysis of 69 cases, and finds the mortality in the decade between 1877 and 1887 is 46%, or a gain on the statistics previous to 1873 of 27%, and "this in spite of the fact that nearly two-thirds of the fatal cases were operated upon at a time which would almost necessarily preclude successful results."

Dividing these cases into groups, according to cause, and giving the mortality, we have:

	Recoveries.	Deaths.	Total.
Intussusception	6	5	11
Bands or adhesions	14	10	24
Volvulus	3	4	7
Biliary or intestinal calculi	1	3	4
Diverticula	0	4	4
Unclassified	13	6	19

Again, we must insist that the time has come when an early exploratory laparotomy in these cases is imperative.

MYXŒDEMA.

The Committee of the Clinical Society of London have made a report,[19] of which the following are the conclusions:

(1) That myxœdema is a well-defined disease.

(2) That the disease affects women much more frequently than men, and that the subjects are, for the most part, of middle age.

(3) That clinical and pathological observations respectively indicate, in a decisive way, that the one condition common to all cases is destructive change of the thyroid gland.

(4) That the most common form of destructive change of the thyroid gland consists in the substitution of a delicate fibrous tissue for the proper glandular structure.

(5) That interstitial development of fibrous tissue is also observed very frequently in the skin, and with much less frequency in the viscera, the appearances presented by this tissue being suggestive of an irritative or inflammatory process.

(6) That pathological observation, while showing cause for the changes in the skin during life, for the falling off of the hair and the loss of the teeth, and for the increased bulk of the body, as due to the excess of subcutaneous fat, affords no explanation of the affection of speech, movement, sensation, consciousness, and intellect, which form a large part of the symptoms of the disease.

(7) That chemical examination of the comparatively few available cases fails to show the general existence of an excess of mucin in the tissues adequately corresponding to the amount recorded in the first observations, but that this discrepancy may be in part attributed to the fact that tumefaction of the integuments, although generally characteristic of myxœdema, varies considerably throughout the course of the disease, and often disappears shortly before death.

(8) That in experiments made upon animals, particularly on monkeys, symptoms resembling in a very close and remarkable way those of myxœdema have followed complete removal of the thyroid gland, performed under antiseptic precautions, and with, as far as could be ascertained, no injury to the adjacent nerves or to the trachea.

(9) That in such experimental cases a large excess of mucin has been found to be present in the skin, fibrous tissues, blood, and salivary glands; in particular, the parotid gland, normally containing no mucin, has presented that substance in quantities corresponding to what would be ordinarily found in the submaxillary gland.

(10) That the full analysis of the results of the removal of the thyroid gland in man demonstrates in an important proportion of the cases the fact of the subsequent development of symptoms exactly corresponding to those of myxœdema.

(11) That in no inconsiderable number of cases the operation has not been followed by such symptoms, the apparent immunity being in many cases probably due to the presence and subsequent development of accessory thyroid glands, or accidentally incomplete removal, or to insufficiently long observation of the patients after operation.

(12) That, whereas injury to the trachea, atrophy of the trachea, injury of the recurrent laryngeal nerves, injury to the cervical sympathetic and endemic influences have been, by various observers, supposed to be the real causes of experimental or of operative myxœdema (cachexia strumipriva), there is, in the first place, no evidence to show that, of the numerous and various surgical operations performed on the neck and throat, involving various organs and tissues, any one save those in which the thyroid gland has been removed, has been followed by the symptoms under consideration; that in many of the operations on men, and in most, if not all, of the experimental operations made by Professor Horsley on monkeys and other animals, the procedure avoided all injury of surrounding parts, and was perfectly aseptic; that myxœdema has followed removal of the thyroid gland in persons neither living in, nor having lived in, localities the seat of endemic cretinism; that, therefore, the positive evidence on this point outweighs vastly the negative, and that it appears strongly proved that myxœdema is frequently produced by the removal, as well as by the pathological destruction of the thyroid gland.

(13) That whereas, according to clause 2, in myxœdema women are much more numerously affected than men, in the operative form of myxœdema no important difference of the same kind is observed.

(14) That a general review of symptoms and pathology leads to the belief that the disease described under the name of myxœdema, as observed in adults, is practically the same disease as that named sporadic cretinism when affecting children; that myxœdema is probably identical with cachexia strumipriva; and that a very close affinity exists between myxœdema and endemic cretinism.

(15) That, while these several conditions appear in the main to depend on, or to be associated with, destruction or loss of function of the thyroid gland, the ultimate cause of such destruction or loss is at present not evident.

CANCER AND CANCEROUS DISEASES.

Paget, in an extremely interesting and suggestive article,[20] calls attention to the likeness existing between cancers and innocent tumors on the one hand,

[1] Concluded from page 249.
[18] Ann. of Surg., Feb., 1888, p. 81.
[19] Lancet, June 2, 1888.
[20] Lancet, Nov. 19, 1888.

and specific and micro-parasitic disease on the other. Paget believes that as it is now demonstrated that every specific disease is known to be the result of some distinct morbid substance, that we shall eventually find that there is some micro-parasite or substance that is essential to the production of cancer. Further he considers that cancer is allied to the group of specific disease, including syphilis, tuberculosis, glanders, leprosy, and actinomycosis. They are all essentially morbid growths, self-maintaining; have special modes of degeneration and of ulceration, to which they all tend; are all at some time either infective to parts far off by transmission of particles through lymphatics or bloodvessels, or to adjacent parts by invasion, or to other beings by inoculation; they all occur in parts, by preference, subject to local injury or irritation. These he considers are strong likenesses, and as we know that in tuberculosis, syphilis, and leprosy, there is in each case a specific morbid material in the blood, so we should believe that there is one in cancer. Sir James Paget, in concluding this admirable lecture, believes that we may reasonably hope for a remedy against cancer, as mercury and quinine are against syphilis and malaria.

GRAFTING.[21]

Surgeons are familiar with skin grafting in the human subject, but it is rather a novel procedure to substitute the skin of birds and poultry for snips from the patient's own healthy skin. Wiesmann twice transplanted skin from pigeon to pigeon with success and three times from fowl to fowl. Under the title of *Dermepenthesis*, Mr. G. F. Cadogan-Masterman published some interesting cases in which he had succeeded in utilizing the skin of young wild rabbits for the purpose of bringing about the cicatrization of raw and ulcerating surfaces. Several others have repeated and varied Wiesmann's experiments, but before Mr. Masterman none of them seem to have been enterprising enough to spare their patients the disagreeable snipping incidental to the operation as it is usually practised. At about the same time Dr. Redard communicated to the Paris Academy of Medicine some observations of his own with animal grafts on wounds in human beings. In a case of severe burn of the scalp of eight months' standing, in a child two years of age, he obtained rapid cicatrization by means of grafts from a fowl. He first tried grafts of frog's skin, but as these proved to be repulsive to patients, and did not give very good results, he substituted others from the fowl, and the wound, which measures three inches by two and a half, had completely healed in two months. He had been equally successful in other and subsequent cases. He takes the skin from beneath the wing of a chicken, carefully securing the subjacent cellular tissue, but avoiding adipose tissue. The transplanted pieces varied from a sixth to a third of an inch in size, and they were maintained in position by means of a little cottonwool and iodoform gauze. The skin of birds and fowls has the advantage of being supple, delicate and vascular; it adapts itself readily to the surface of the wound, and adheres without undergoing absorption.

Senor F. Altramirano mentions in a Mexican journal, *El Observador Médico*, a case in which he made some experiments in skin grafting on an obstinate ulcer left by a large carbuncle.[22] More ordinary means having failed to cause it to heal, he applied three skin grafts taken from the patient himself. Of these only one took, and the man expressed so much repugnance to the proceedings that another source had to be found for subsequent grafts. A cock was selected and fragments cut from his gills; these were split, divided into ten pieces, and the raw surfaces applied to freshened portions of the ulcer. A carbolized dressing was then bandaged on, the whole being constantly moistened. On the third day, on the dressing being removed, all the ten fragments were found organically adherent. A number of new grafts were then applied, cut from the comb, the gills, and the skin of the back of a chicken. None of these were successful. The cock's gills were again resorted to, and four more fragments successfully grafted. A fresh set of grafts were prepared from this source; but all the cellular tissue was cut or scraped away, in some cases little but the epidermis being left, in others the edges being bevelled, so that the epidermis was in direct contact with the new surface of the ulcer. This set of grafts proved very unsuccessful, so that Dr. Altramirano was led to the conclusion that no advantage is gained by applying the epidermic layer immediately in contact with the surface of the ulcer.

STERILIZED DRESSINGS.

Schlange's[23] experiments led him to believe that the ordinary dressings "aseptic" are not so. Blood and albuminous fluids render inert sublimate dressings. Soaking in boiling water or a sufficiently strong sublimate solution, and immediately applied, is truly aseptic, but such wet dressings have numerous disadvantages, for example, prevention of evaporation of wound secretion, tendency to produce eczema, hence applicable only in suitable cases. Routine dressings must be dry, as ordinarily prepared dry dressings contain infectious germs. Hence sterilized dressings are substituted prepared by von Bergmann as follows, and used exclusively by him with admirable results. The raw material, cut as desired, is exposed in a wire basket in an oven, to superheated steam for one hour: after removal and drying for a minute, the basket, with untouched contents, is put in an iron cylinder, from which the gauze is withdrawn as required. This secures with the minimum of handling an absolutely germ-free material. Schlange thinks that the speedy and undisturbed evaporation of wound secretion important for the healing of wounds. Decomposition of blood or discharges in a sterilized aseptic dressing is only possible from the action of germs alighting on its surface; mere staining twenty-four hours after an operation of the superficial layers, does not require renewal. No risk involved if evaporation is favored by patient's position, etc. Extensive soaking of dressing require renewal of superficial layers; deep layers beginning to dry should be left undisturbed.

DISINFECTION OF SURGICAL INSTRUMENTS AND DRESSINGS.

Renard,[24] in an elaborate article, finds that the disinfection of instruments by a five per cent. solution of carbolic acid is unreliable, the germs withstanding a soaking of from thirty to forty-five minutes. Bichloride is reliable, but has a chemical action on the instruments. Flaming, if thorough, is efficient. Boil-

[21] Brit. Med. Jour., Feb. 18, 1888.
[22] Lancet, May 19, 1888.
[23] Archiv. f. Klin. Chir., Vol. XXXVI, 1888.
[24] Revue de Chirurgie, No. 6, 1888.

ing at 212 F. is efficacious, if long continued. Steam at 230 F. destroys all germs, if the substance be submitted to it for thirty minutes. Renard has a copper cylinder boiler that he fills about an eighth full of water; baskets containing instruments, and provided with feet that raise them from the surface of the water, are put in the cylinder, a lid containing a manometer and a safety-valve is screwed in place, and by means of an alcohol lamp the water is boiled, the air in the cylinder passes off by a stop-cock in the lid, which is then closed, and the pressure is increased until it represents a temperature of 230 F. Absolute disinfection is obtained in a half of an hour. Sponges are not subjected to this temperature, and instruments are never subjected to a temperature of more than 245 F. He draws the following conclusions:

(1) Disinfection by steam compressed at 230 F., as applied in the apparatus above described, is certain and practical.

(2) Instruments or dressings submitted to this treatment for fifteen or twenty minutes are absolutely disinfected.

(3) The apparatus is very simple, not dangerous, and can be trusted to a nurse.

(4) Neither dressings nor instruments are in any way altered by a prolonged treatment, if the temperature does not exceed 230 F.

DRESSING FOR CIRCUMCISION IN ADULTS.

Ballance[25] describes his method of dressing the penis as follows:

When the patient is etherized, the outline of the posterior border of the glans is marked on the skin with an aniline pencil. The skin of the prepuce is slit and removed up to the aniline line. The mucous membrane is next cut away, leaving only a free edge of about one-eighth of an inch in width. Any bleeding which occurs should be entirely arrested, and asepsis must be insured by frequent sponging with carbolic or sublimate solutions. Numerous horsehair stitches are then inserted, so as to bring accurately together the fresh-cut edges of the skin and mucous membrane, and subsequently, after a further sponging and drying, a piece of gauze two layers in thickness, and wide enough to reach from the root of the penis nearly to the meatus, is wrapped *loosely* round the penis, and secured by several applications of the collodion brush. The setting of the collodion is hastened by the use of a fan, so that the air is kept in motion, and the patient should not be allowed to recover from the anæsthetic till the dressing is quite firm and hard.

In this manner the penis is protected by a kind of carapace, and the patient is relieved from the pain and tenderness attendant upon contact with the bedclothes or other objects. In fact, the organ can be handled as if no operation had been performed. It is hardly necessary to add that erections, which are under the usual conditions so painful, cannot occur.

The patient never had any discomfort from first to last, and the day after the operation put on his trousers without my leave, and expressed himself as desirous of taking a long walk or of going to business.

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Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

REGULAR MEETING, Tuesday, June 12, 1888, at 19 Boylston place.

In the absence of the regular chairman, on motion of DR. T. DWIGHT, DR. JAS. S. GREEN was made chairman, *pro tem.*

DR. THOMAS DWIGHT exhibited

A PLASTER MODEL OF THE ARM,[1]

made from actual specimens, and divided into seventeen sections.

[1] See page 245 of the Journal.

APPARATUS FOR THE STERILIZATION OF INFANT FOOD.

DR. ROTCH presented for the inspection of the Society an apparatus devised by him, by which the infant's food could be given to it sterile, as from the human breast. He remarked that the approach of the warm season made it our duty to adopt every means within our power to prevent the onset of, and to treat when they appeared, those gastro-intestinal disturbances which so frequently were the cause of the high rate of mortality among artificially fed infants. Sterilization of the food was an important addition to our knowledge of such means, and should be given a careful trial. Sterilization as yet had not been so fully adopted in this country as in some parts of Germany, notably Munich, where Professor Soxhlet's apparatus for sterilizing milk was being used in over a thousand families.

Professor Soxhlet has for some years been making investigations of this nature, and his results, and a wood cut showing his apparatus, were published in the *Münchener Medizinische Wochenschrift*, Nos. 15 and 16, 1886. Soxhlet's apparatus, however, although for bacteriological purposes good, is not so useful clinically as it might be; and Dr. Rotch then explained that sterilization was but one factor in having the infant properly fed, and that a proper receptacle for the administration of the food must satisfy the other factors as well as that of sterilization. Quantity was one of these important factors, the infant's stomach growing very rapidly in the first two months, and coming to a comparative standstill in the next three months, thus necessitating a rapid increase in the bulk of the food during the first two months, and very little increase in the next three months.

Dr. Rotch had his attention first drawn to the subject of sterilization by Dr. Ernst in the spring of 1887, Ernst at that time having treated a baby by that method. Dr. Rotch then devised the apparatus, which he considers to best combine all the factors of artificial feeding, in June, 1887, and his article describing his work in this direction, and giving illustrations of his feeding tubes and steamer, appeared in the *Archives for Pediatrics* in August, 1887, Soxhlet's apparatus at that time not being known to him.

During the autumn of 1887, Dr. Rotch also experimented clinically with his sterilizing apparatus during his service in the wards at the Infant Hospital.

The next work of the kind done in this country was that of Dr. Augustus Caillé, of New York, who, following in the footsteps of Soxhlet, and guided by his article, investigated the proper manner of boiling and preserving milk for infants, and his investigations, published in the *Diatetic Gazette* for April, 1888, support the conclusion already arrived at by Soxhlet, Ernst, and others, namely, that milk became sterile when subjected to steam under pressure at 212° F. for from fifteen to twenty minutes. Caille has also had the Soxhlet apparatus made less complicated and more compact.

The next publication on sterilization was that of Dr. J. A. Jeffries, of Boston, in the May number of the *American Journal of the Medical Sciences*, 1888, and his work was more distinctly bacteriological, and was done in Dr. Ernst's Bacteriological Laboratory at the Harvard Medical School, with the same result so far as the length of time found to be necessary for sterilization was concerned, as that of the previous investigators.

Dr. Rotch then said that there were certain points to be noted for clinical purposes.

Where the food is prepared to be given immediately to the infant, one steaming for twenty minutes is sufficient, for we have then killed the developed bacteria; but where the food is to be kept for a number of days it was found that a second steaming was in most cases needed, in order that the spores should also be destroyed.

Dr. Rotch then went on to say that milk could in this way be sterilized and made use of where the infant has to travel for a period of weeks, or whenever a large supply for a number of feedings was desired.

Dr. Jeffries' experiments showed that bacteria were present in Anglo-Swiss condensed milk, and that hence this food should be sterilized as well as those prepared with ordinary cow's milk.

Dr. Rotch explained that his feeding tubes could be used for any of the infant foods, but he wished to draw attention to certain points regarding a combination of milk, cream, limewater and milk sugar which had, in varying proportions, been extensively used by him during the past three years, both in hospital and private practice. First, that this mixture turns brown when steamed, but that this change of color has been found to be innocuous to the infant, and does not contraindicate the steaming. Second, the mixture is decidedly alkaline, while human milk is faintly alkaline. Third, that steaming this mixture renders it neutral, the limewater entering into combination with a portion of the milk sugar, and hence that the limewater if used should not be added until after the rest of the mixture has been steamed.

DR. J. A. JEFFRIES: Dr. Rotch spoke of my work. I examined only one or two kinds of condensed milk. I should not like to say that the bacteria could always be found. I found two kinds, one of which is an ordinary bacterium in this part of the world, and might have got in by standing; and the other I found in moderate amount as a species that is totally distinct from any that has been seen before or since in the laboratory, so that it seems particularly clear that it was not contamination; so I think it rests upon pretty good ground that they do occur here.

As to sterilizing the milk, there are some interesting points. A German investigator has fed dogs, first, with ordinary milk or cow's milk, and then with a mixed diet, and then with sterilized milk, and has examined the fæces for bacteria. When he gets down to the sterilized milk for a certain length of time he claims that the stools become like those of an infant, that is, yellow, and that the bacteria are for practical purposes limited to two kinds: one is the brevis bacillus, and the other one a bacillus which turns the sugar of milk into lactic acid in the absence of air, and seems to be peculiar to the intestines. It is not the same as the lactic acid bacillus, but a different species. These experiments seem to show conclusively that there is something in the sterilization. It seems to me that if we can thus change or prevent the putrefactive processes we shall accomplish a great deal.

DR. S. G. WEBBER read a paper on

CASES OF TUMOR OF THE BRAIN.[2]

DR. P. C. KNAPP: I have listened with very much

[2] See page 277 of the Journal.

interest to these cases of Dr. Webber. There are a great many points of value in them, especially to me. Among them, in the second case which Dr. Webber reports, were the tumors in the occipital lobe, as explaining the loss of vision. It is merely further proof of the views which Munck advanced some seven years ago now, that the centre for vision, as Dr. Webber has said, was in the cuneus and in the adjacent convolutions on the external surface of the occipital lobe. That view was combatted most vigorously by Ferrier, who attacked Munck most sharply for having advanced the theory; but the evidence from human pathology, which has since been collected by Fillegreen (?) and by Seguin, has completely confirmed Munck's views, and the evidence from experimental physiology is also tending thoroughly in that direction. It need only be said that, since 1881, Ferrier has very largely abandoned his position, and, as far as could be expected, is endorsing Munck's views, but still holds that there are other centres; and I am surprised to see that Gowers, in his latest books, still upholds him in his views. Of course, in the case where there are so many tumors, it was doubtful, but it certainly points in the direction that all human pathology has furnished us in that regard.

The hour is getting so late that there is very little that I will say, except that I would like to speak of a case which I have had under observation for several months, which is very closely allied to this one of Dr. Webber. Some two or three months ago, I was asked by Dr. Sumner to see a case in his wards with history of syphilis, having come in with no definite symptoms, but very much depressed, and quite sure that he had some fatal disease — so much so, that he no sooner entered the hospital than he sent for a lawyer to make his will. After entrance he had several convulsions, which were regarded, not by Dr. Sumner, but by some of the other physicians who saw him in them, as hystero-epileptic. They were peculiar attacks, and consciousness was retained through them. I saw him in one of them later on, where consciousness was retained in part, and was told that he would have one whenever you spoke to him. There was conjugate deviation of the eyes and head to the left, with marked spasm of the left arm, and, in the later convulsions, in the left leg also; it began though, I think, in the arm, or possibly in the face, but it was only after he had had a number of convulsions that it extended to the leg. Immediately after the convulsion, the patellar reflex on the convulsed side was markedly exaggerated, and there was a paresis of the left side. During the convulsion there was an involuntary escape of urine. I at once made the diagnosis of some lesion in the cortex, affecting chiefly the centre for the arm and face in the right cortex, although I was unable to determine whether it was a tumor or some meningeal thickening, — some irritant lesion, and, of course, the question of an hysterical attack was settled definitely. Later on, the man had convulsions every fifteen or twenty minutes, became practically comatose, passed urine, and, I think, fæces, in bed, and developed bed-sores, and about that time I feared that he was going to die. In fact, I made that prognosis, and advised the house-officers to tell his friends that probably he would not linger a great while. But I took the advice that he should be given iodides, although, his stomach being rather weak, he could not take them in very large doses — not over thirty grains. Under iodide and mercury alternating, he has made now a very good recovery, and is up and dressed, walking about, with no convulsions, and only a little weakness on that side.

(To be continued.)

Recent Literature.

Operative Surgery on the Cadaver. By Jasper Jewett Garmany, A.M., M.D., F.R.C.S., Attending Surgeon to Out-door Poor Dispensary of Bellevue Hospital; Visiting Surgeon to Ninety-Ninth Street Reception Hospital, Branch of Bellevue Hospital; Member of the British Medical Association, etc. New York: D. Appleton & Co. 1887.

For the purpose for which this book was written, it is admirably adapted in its simple, well-written, and explicit directions. Occasionally the author has sacrificed detail in operative procedure to brevity in style. The absence of plates explanatory of the text is greatly to be regretted, for in teaching a manipulative subject like operative surgery, frequently a rude diagram is worth a whole page of text. We trust that a future edition will allow the correction of this important omission, for in other respects Dr. Garmany has given us an admirable work.

A Manual of the Operations of Surgery, for the Use of Senior Students, House-Surgeons, and Junior Practitioners. By Joseph Bell, M.D., F.R.C.S., Edinburgh; Consulting Surgeon to the Royal Infirmary, and Surgeon to the Royal Edinburgh Hospital for Sick Children. Illustrated. Sixth edition, revised and enlarged. Edinburgh: Oliver & Boyd, Tweedale Court. London: Simpkins, Marshall & Co. 1888.

This work, which was written as a guide to the author's students in years gone by, has passed through six editions, and it is the author's purpose in the present edition to bring the work up to date. We do not feel that the author has accomplished this object, for numerous and glaring omissions of well-recognized operative procedures do not appear in this revised edition. Then, again, the author does not voice the current sentiment in regard to certain operative procedures, as, for instance, he slurringly refers to the use of the galvano-cautery, wire-snares, etc., for the removal of nasal polypi, as procedures which have been devised "greatly to the benefit of the authors' pockets." Some of his statements may be fairly regarded as coming from a man who is ripe in his own experience, and has ceased to be receptive of new ideas. Some twenty pages, for instance, are devoted to the consideration of lithotomy and lithotrity. This is admirably complete, but when such a well-recognized procedure as litholopaxy is dismissed in a foot-note, we cannot consider that the author has brought his work up to date. For the old, classical operation, the description is at once not only clear in diction, but forcible in the impressiveness of the style adopted by the author.

The chapters on tenotomy and operations on nerves are lamentably scanty. The work doubtless is well adapted to the needs of the students who have passed under Mr. Bell's instruction, but for other purposes the surgeon of to-day will find many books that will better answer his needs.

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THE FIRST TRIENNIAL CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THE First Triennial Congress of American Physicians and Surgeons has been often mentioned in these columns. The meeting, this year, comprises these eleven societies: the Surgical Association, the Genito-Urinary Association, the Laryngological Association, the Climatological Association, the Association of American Physicians, the Otological Society, the Ophthalmological Society, the Neurological Association, the Dermatological Association, the Physiological Society, and the Orthopedic Association. These societies devote the day-time to their respective society meetings, and their programmes have already been published in our pages.

When this number of the JOURNAL reaches its readers, the Congress will have been held. It is apparent that in numbers, at least, it will reach a comparatively high figure for the limited membership of the societies that compose it, and the papers promised show that original and interesting material is to be brought forward.

In one way the Congress ought to interest the profession at large. It is a cause of anxiety to many lest the specialists should lose their attachment to the profession as a whole. This Congress is, as it were, an acknowledgment, on the part of men who are members of the various special societies, of a common interest and a common bond. As they have to a certain degree separated themselves from the general practitioner, they here return, bringing the fruits of their work in their respective fields for the general advantage.

The general meetings take place in the evenings. On Tuesday evening, September 18th, papers on "Intestinal Obstruction in its Medical and Surgical Relations" were to be read by Dr. Reginald H. Fitz, of Boston, and Dr. Nicholas Senn, of Milwaukee, Professor of Surgery in Rush Medical College, Chicago, Ill., followed by a discussion, in which Dr. William Pepper, Dr. J. Collins Warren and Dr. Thomas G. Morton, and others were expected to take part. On Wednesday evening, September 19th, papers on "Cerebral Localization in its Practical Relations" will be read by Dr. Charles K. Mills, of Philadelphia, and Dr. Roswell Park, Professor of Surgery in the Buffalo Medical College, followed by a discussion by Dr. David Ferrier, Mr. Victor Horsley, Dr. W. W. Keen, Dr. E. C. Seguin, Dr. Robert F. Weir, and others. Thursday evening, September 20th, is to be devoted to the address, by the President, John S. Billings, M.D., U. S. A., on "Medical Museums," followed by a general reception in the United States Army Museum Building. The JOURNAL is delayed to give our readers the address, which will be found in full in our pages.

The address of the President illustrates the remarkable faculty, which shows itself in all Dr. Billings's addresses, of including the medical world in his vision, and making its several countries contribute to the instruction of his auditors: and the true brotherhood of science and the kinship of nations seems realized as he compares the distant and time-honored medical institutions of the old world with those of our own country.

The functions of medical museums in general and of the Army Medical Museum in particular, will doubtless be better understood than before. What Dr. Billings has to say concerning the relation of the Army Medical Museum to the public will surprise the majority of those who hear or read his speech. That non-medical people should be admitted to a medical library in any way save by stealth, has never entered into the ideas of most of us. But that there ought to be an opportunity for those who desire to learn something about themselves, most physicians will doubtless admit when the subject is fairly presented to them; and if such a function belongs to the National Medical Museum, will it not presently be seen to belong also to other museums of a similar nature? This is to be — not improbably — one of the ways in which the public is to be educated up to a point where education will be a necessity on the part of the man who professes to give medical advice. We shall give our readers an opportunity to read for themselves the proceedings in subsequent numbers.

YELLOW FEVER, SOUTH AND NORTH.

THE sad case of Professor Richard A. Proctor has naturally excited extraordinary attention from the prominent position of the patient in the world of astronomical science. It seems to have been a typical one of yellow fever, and yet it is certainly remarkable that, so far as known, there has been no yellow fever at Oak Lawn, Marion County, Florida, from whence he came to New York. He arrived at the latter city on Monday, the 10th instant, having travelled through by rail. To this long journey he ascribed the indisposition he felt on going to bed at the Westminster Hotel at Irving place and Sixteenth Street. On Tuesday morning he was much worse, and was ad-

vised to consult Dr. George S. Conant, who formerly was an inspector of contagious diseases in the health department. Dr. Conant examined Prof. Proctor, and sent word for Dr. Cyrus Edson, chief inspector of contagious diseases. The two experts made a careful examination, and also called Dr. A. Jacobi in consultation, knowing that he had had experience in yellow fever cases.

Prof. Proctor had a high fever and his skin had a yellowish color. He also vomited at intervals, but the physicians could not be certain that he was suffering from yellow fever. He told the physicians that he had not been near Jacksonville or any other yellow fever centre, and, so far as he knew, had not been exposed to the disease. A clean bill of health had been given to him when he left Florida. The physicians decided that he ought to be removed to the Willard Parker Hospital, to which he cheerfully consented on being told of their suspicions, but said he was confident the disease would not prove to be yellow fever. During Tuesday he steadily improved, was able to walk, and stood well his transportation in an ambulance. That night he rested well, but early the next morning came a relapse, attended by the "black vomit," convulsions and death. Every possible precaution was observed by the officers of the Board of Health, and no fear is apprehended that any other cases of the disease will arise in the city from this source.

On account of the public interest in this case, and for the purpose of allaying any uneasiness that might be felt as regards possible future danger, President Bayles has had the following memoranda regarding yellow fever in New York prepared by the statistician of the Board:

"In 1856, between April 10th and October 4th, seventy-nine infected vessels from infected ports arrived in the Bay of New York, and anchored for four miles above and below the Narrows, between Long Island and Staten Island, from Gravesend Bay to within a short distance of New Brighton. The fever extended to the land along the borders of each island opposite the line of infected vessels, and no farther, except one spot on the south side of Governor's Island and about opposite on the New Jersey shore. Thirteen deaths from the disease occurred in New York, but the victims had all been infected outside of the city, and no case originated either in New York or Brooklyn. During July, August and September, sixty-four cases occurred on Governor's Island, and several hundred along the shores of Long Island and Staten Island.

"In 1870 occurred the last appearance of the disease in an epidemic form in this vicinity. It was practically confined to Governor's Island, where, out of a population of 774, there were 159 cases and 52 deaths. The first case was reported August 13th, and the last October 26th, the last death being on October 29th. On October 1st the sick were removed from Governor's Island to quarantine. It is to be noted in connection with the question of contagion that twenty-nine cases occurred among those left behind in the infected district, while the sick taken to quarantine station, eighty-two in number, did not communicate the disease to a single individual. Eleven patients who contracted yellow fever on the Island and sickened in the city of New York (of whom nine died) did not in any instance communicate the disease, though quartered in crowded, filthy parts of the city. Only three deaths from cases of yellow fever were reported in the annual report of the Board of Health for 1870, because the earlier cases were not properly diagnosticated. No deaths from this cause were reported on doctors' certificates until October 2d, when, as a fact, there had been six previous cases reported as typhus fever, remittent fever, pernicious fever, hepatitis, coma and paralysis. The disease had been prevailing on Governor's Island since August 13th, but the first death occurred in the city on September 9th. No suspicion was aroused even in the city till September 13th, and the diagnosis of the epidemic was not made sure even on Governor's Island until September 27th."

The progress of yellow fever in Jacksonville during the past week is shown by the following official statistics. The total cases up to September 9th, were as we reported last week, 604, with 73 deaths.

"For twenty-four hours ending 6 P. M., September 10th, new cases, 32; deaths, five. September 11th, new cases, 48; deaths, 11. September 12th, new cases, 59; deaths, 10. September 13th, new cases, 44; deaths, 4. September 14th, new cases, 43; deaths, 12. September 16th, new cases, 74; deaths, 9. September 17th, new cases, 52; deaths, 6. September 18th, new cases, 156; deaths, 20. September 19th, new cases, 130; deaths, 14, Total to yesterday morning, 1,333; deaths, 170."

Among the dead are the chairman of the committee on sanitation of the Citizen's Association. About 65 cases had been reported at McClenny up to September 14th, with 10 or 12 deaths. The disease appeared among the refugees at Hendersonville, N. C. Six cases developed at Gainesville, among the members of the Gainesville Guards who lately went to suppress the longshoremens' riot at Fernandina.

Yellow fever was reported as present in New Orleans, and a quarantine against that city was established at Galveston; but the Louisiana State Board of Health promptly came out in the following denial and protest:

"We give positive assurance that there is no yellow fever in New Orleans. There has not even been a suspicious case this summer. Should a case occur you will be immediately notified, in accordance with the pledge entered into between the boards of health of the Gulf States."

The Governor of Texas distrusting this assurance, has refused to remove the quarantine.

The weather during much of the past week in Jacksonville was wet and hot, and the ground steamed freely. Fourteen nurses, sent by Harry Miner of New York, arrived September 16th, and twenty-three nurses from New Orleans. Several of these, especially those from New York, were unacclimated, and were to be returned home. None but acclimated and experienced yellow fever nurses and physicians are desired.

THE GERMAN TREATMENT OF OBESITY.

DR. I. BURNEY YEO, in the current number of the *Nineteenth Century*, discusses the Schweninger (Oertel) treatment of obesity, now popularized in Germany by a brochure which has gone through sixteen editions.

This system of treatment, which can hardly be said to be Schweninger's, being borrowed principally from Oertel, is directed mainly against the prevalent tendency (especially in Germany) to morbid obesity — in other words, to getting too fat. Dr. Yeo asks two practical questions: (1) Is there any harm in getting fat? (2) When may a man be said to be getting too fat? and in reply to the first question, remarks that a very fair share of health and activity is not inconsistent, in some constitutions with a considerable amount of obesity. "As far as longevity is concerned, it may be some comfort to know that the tables of some of the American life insurance offices show that it is better to be much above the average weight than much below it; but it is better to be neither." He adds, however, that a great excess of weight due to an increased formation of fat is an abnormality closely bordering on disease. Such excess of adipose is, he says, almost always due to excess in eating, and fat persons who would get thinner should realize this fact. "A daily deposit of a quarter of an ounce of fat will, in ten years, increase the weight of the body by fifty-seven pounds." Excess of food includes excess of the albuminous group (which has been proved to be fat-forming as well as flesh-forming), as well as the carbo-hydrates (fatty, starchy and saccharine foods). In the young and active, the food which they consume is appropriated in the building up of their tissues, and to the development of muscular and nervous energy; there is little or no excess or waste. When the age of growth has come to an end, but is succeeded by an active and vigorous life, food is needed to develop as much muscular and nervous energy as before, or more, but the food needed for growth is needed no longer. But when the period of growth and activity is succeeded by a life of inactivity or indolence or self-indulgence, then, if the same amount of food is taken as was consumed during the period of growth and vigorous exercise, there is a superfluity, which in some cases is deposited and accumulates in the organism in the form of an excessive amount of fat.

The consumption of alcohol favors polysarcia; so also does an indolent, inactive, luxurious life. Alcoholic stimulants restrain waste on well-known principles, and an indolent life promotes accumulation of force making materials far in excess of expenditure.

Dr. Yeo considers the "Banting" system, and objects to it that it rests on an erroneous scientific foundation, which overlooks the fact that fat can be formed out of nitrogenous food, out of the lean of meat, for instance, as well as out of carbo-hydrates. "Not only does it often induce subjective feelings of discomfort and bodily feebleness, a great loathing of the constant and exclusively meat diet, as well as digestive disturbances, which necessitate its interruption, but it fails, in the more serious cases, to relieve the feebleness of the heart, the tendency to congestion of the lungs, and even dropsy, which complicate the graver forms of excessive corpulency." Ebstein's "cure" allows all kinds of fatty food — the fat of meat, butter, cream, fatty sauces and soups, but prohibits the carbo-hydrates, such as sugar, potatoes, and all forms of starchy food, and of bread, permits at most, three and a-half ounces a day. All kinds of meat in small quantity, as well as asparagus, spinach and cabbage are permitted. Dr. Yeo remarks that the success which has attended the Ebstein method must be referred mainly to the abstinence from the carbo-hydrates which it enforces, but it is hardly sufficiently supporting, and fails to relieve the heart-disturbances which attend extensive obesity.

The Schweninger (or rather the Oertel method) not only provides for the removal of excess of fat, but it also prevents its reaccumulation, and at the same time restores tone to the organs of circulation, which so often, in cases of excessive obesity, is lost. Oertel's system agrees with those above given in reducing the carbo-hydrates in the diet of the obese. It allows more fat than the Banting formula, and nearly twice as much albuminous food as Ebstein's, less than half as much fat as the latter, and about twice as much carbo hydrates. "This amount of fat and carbo-hydrates is admissible in those cases where active exercise can be and is taken, as muscular exertion is attended with a considerable destruction of fat, and the relative excess of albuminous food in this formula leads to the displacement of the fat accumulated in the substance of the muscles, and to a new formation of muscular tissue in its place. At the same time, this diet protects the nitrogenous tissue from waste, a condition of health which is lost sight of in Ebstein's method. Indeed, the central idea in this cure is to *strengthen the muscle of the heart*, and this is aimed at, not only by a carefully considered dietary, but by the prescription of regular active bodily exercise and suitable gymnastics."

This method is somewhat modified in the management of those grave cases where the accumulation of fat about the heart has led to great embarrassment or perhaps degeneration, of that organ, and to consequent visceral congestion, and even to dropsy. In such cases, the fat and carbohydrates of the food is still further reduced, and the amount of fluid consumed is severely restricted, and perspiration is promoted by vigorous bodily exercise, especially in climbing graduated ascents. The following, then, are the objects aimed at in this cure:

(1) To improve the muscular tone of the heart.

(2) To maintain the normal composition of the blood.

(3) To regulate the quantity of fluid in the body.

(4) To prevent the deposit of fat.

These objects are attained by the following means:

(1) The muscle of the heart is strengthened by enforced exercise, such as *climbing heights*. This re-

quires great care, and the exercises must be *graded*, the amount of work being increased as the patient can bear it.

(2) To preserve the normal composition of the blood, the food should be chiefly albuminous. It may consist of the lean of roast, or boiled beef, veal, mutton, game, and eggs. Green vegetables (as cabbage or spinach, may be taken; fat and carbo-hydrates only in very limited quantities; from four to six ounces of bread per diem.

(3) To regulate the quantity of fluid in the body the amount of fluid drunk daily must be limited. One cup (rather less than six ounces) of coffee, tea, or milk morning and evening, and about twelve ounces of wine, and from eight to sixteen ounces of water shall comprise all the fluid consumed in twenty-four hours. Beer is entirely forbidden. The discharge of fluid from the body is promoted by active exercise and occasionally by a course of baths, with packing.

(4) To prevent the deposit of fat the principles of diet already set forth must be carried into practice as follows:

Morning.—One cup of tea or coffee with a little milk, altogether, about six ounces; bread about three ounces.

Noon.—Three to four ounces of soup, seven to eight ounces of roast or boiled beef, veal, game, salad or a lighter vegetable, a little fish (cooked without fat) if desired, one ounce of bread or farinaceous pudding (never more than three ounces), three to six ounces of fruit, fresh preferred, for dessert. It is desirable at this meal to avoid taking fluids, but in hot weather, or in the absence of fruits, six to eight ounces of light wine may be taken.

Afternoon.—The same amount of coffee or tea as in the morning, with, at most, six ounces of water, an ounce of bread as an exceptional indulgence.

Evening.—One or two soft-boiled eggs, an ounce of bread, perhaps, a small slice of cheese. Salad and fruit, six to eight ounces of wine, with four to five ounces of water.

Such, briefly summarized, are the principles of this peculiarly German anti-fat regimen, for which, as Dr. Yeo rightly affirms, the credit almost entirely belongs to Professor Oertel, the main features of it having for years been set forth in his writings. These principles seem to commend themselves as sound, though their practical application will require continued modification to adapt them to the stage of the affection, to the constitution and habits of the patient.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 8. 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	716	380	33.24	10.34	17.87	2.37	3.63
Philadelphia	1,016,758	365	161	23.56	11.78	9.86	7.39	4.11
Brooklyn	751,432	342	173	29.53	10.52	17.83	1.75	4.09
Chicago	760,000	291	163	33.33	8.24	17.52	4.81	7.90
St. Louis	449,160	205	95	23.41	5.36	8.78	2.44	6.83
Baltimore	437,155	177	82	27.12	7.91	12.99	5.08	2.26
Boston	407,024	175	69	18.85	12.00	13.71	1.14	2.86
Cincinnati	325,000	123	42	27.64	13.00	4.87	.81	65.0
New Orleans	248,000	—	—	—	—	—	—	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	83	45	36.14	12.04	16.86	3.61	1.20
Pittsburgh	210,000	70	29	25.71	8.57	4.28	10.00	7.14
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	19	6	36.84	21.05	26.31	—	—
Charleston	60,145	43	21	20.93	23.25	13.95	2.33	—
Portland	40,000	12	3	33.33	16.66	25.00	—	8.33
Worcester	76,328	27	14	51.85	11.11	40.74	7.40	3.70
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	34	24	55.88	2.94	41.17	2.94	2.94
Fall River	61,203	24	12	37.50	20.83	29.16	8.33	—
Lynn	51,467	21	10	33.33	—	28.57	4.76	—
Lawrence	40,175	12	6	25.00	16.66	25.00	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	13	9	38.46	—	38.46	—	—
Somerville	33,307	10	6	40.00	—	30.00	—	10.00
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	15	6	13.33	20.00	6.66	—	6.66
Chelsea	27,552	—	—	—	—	—	—	—
Haverhill	24,979	4	4	50.00	—	25.00	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	8	2	37.50	—	25.00	12.50	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	5	2	—	—	—	—	—
Malden	18,932	9	3	44.44	22.22	22.22	—	22.22
Fitchburg	17,534	6	3	50.00	16.66	33.33	16.66	—
Waltham	16,651	3	1	—	—	—	—	—
Newburyport	13,839	7	2	14.28	—	14.28	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2,819: under five years of age 1,373; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 828, consumption 288, acute lung diseases 189, diarrhœal diseases 436, diphtheria and croup 122, typhoid fever 100, whooping-cough 56, malarial fever 49, scarlet fever 32, measles 11, puerperal fever 11, cerebro-spinal meningitis eight. From whooping-cough, New York 23, Brooklyn eight, Washington seven, Chicago and New Orleans four each, Baltimore and Cambridge three each, Philadelphia and Pittsburgh two each. From malarial fevers, New Orleans 15, New York seven, St. Louis nine, Baltimore six, Brooklyn and Washington four each, Philadelphia two, Nashville and Charleston one each. From scarlet fever, New York 19, Brooklyn five, Philadelphia and Chicago two each, Baltimore, Boston, Nashville and Pittsburgh one each. From measles, New York eight, Philadelphia two, Chicago one. From puerperal fever, New York seven, Brooklyn two, Washington and Charleston one each. From cerebro-spinal meningitis, New York three, Chicago and St. Louis two each, Haverhill one. From erysipelas, Baltimore two, Brooklyn one. No deaths from small-pox.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273 for the week ending September 1st, the death-rate was 17.5. Deaths reported 3,153: infants under one year 1,047; acute diseases of the respiratory organs (London) 130, diarrhœa 379, measles 53, whooping-cough 52, diphtheria 35, scarlet fever 22, fever 29, small-pox (Preston) two.

The death-rates ranged from 10.1 in Plymouth to 25.3 in Leeds; Birmingham 17.1; Bradford 15.2; Bristol 11.5; Hull 16.5; Leicester 21.0; Liverpool 19.7; London 16.4; Manchester 24.1; Nottingham 12.0; Portsmouth 20.6; Sheffield 18.3; Sunderland 20.6.

In Edinburgh 15.1; Glasgow 17.5; Dublin 20 4.

The meteorological record for the week ending September 8, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
Saturday, Sept. 8, 1888.	Daily Mean.	Daily Mean.	Maximum.	Minimum	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, ...2	30 08	67.0	79.0	65.0	76.0	76.0	76.0	N.W.	N.E.	12	1	F.	C.		
Monday, ...3	30.27	63.0	77.0	57.0	62.0	87.0	76.0	N.E.	S.E.	10	6	C.	C.		
Tuesday, ..4	30.14	62.0	66.0	58.0	63.0	91.0	77.0	S.	E.	14	5	F.	O.	.04	
Wednes, ...5	30.13	62.0	77.0	57.0	85.0	42.0	64.0	W.	N.	12	15	C.	C.		
Thursday, ..6	30.53	51.0	55.0	43.0	57.0	55.0	56.0	N.E.	S.E.	12	4	C.	C.		
Friday, ...7	29.61	54.0	58.0	43.0	63.0	57.0	60 0	N.	S.E.	3	12	F.	C.		
Saturday, . 8	30.18	65.0	75.0	53.0	81.0	90.0	86.0	S.E.	S. W.	12	12	O.	R.	.22	
Mean, the Week.	30.13	60.5	69.5	53.7			70.07								

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FROM SEPTEMBER 8, 1888, TO SEPTEMBER 14, 1888.

JARVIS, NATHAN S., first lieutenant and assistant surgeon. Is granted one month extension of leave of absence, on surgeon's certificate of disability. S. O. 210, A. G. O., September 10, 1888.

CALDWELL, DANIEL G., major and surgeon. Is granted two months' leave of absence from September 14, 1888. S. O. 210, A. G. O., September 10, 1888.

BANISTER, JOHN M., captain and assistant surgeon U. S. A. Is granted two months' leave of absence, with permission to apply for an extension of one month, to take effect when his services can be spared. S. O. 211, A. G. O., September 10, 1888.

NORRIS, BASIL, lieutenant and medical director. Will proceed to Fort Klamath, inspect the medical department at that post, and upon completion thereof return to these headquarters, (Department of the Columbia, Vancouver Barracks, W. T.) S. O. 103, September 3, 1888.

PAGE, CHARLES, colonel, assistant surgeon general and medical director of the department Will proceed to Forts Riley and Hays, Kansas, Post near Denver, and Forts Crawford, Lewis and Lyon, Col., and return on public business. The travel enjoined is necessary for the public service. Headquarters Department of the Missouri, Fort Leavenworth, Kansas, September 1888. S. O. 114.

AINSWORTH, FRED C., captain and assistant surgeon. Will, by direction of the Secretary of War, proceed to Kennebec Arsenal, Augusta, Me., on public business connected with the Medical Department of the Army, on completion thereof, will return to his station in this city, Washington, D. C. S. O. 211, A. G. O., September 11, 1888.

STRONG, NORTON, captain and assistant surgeon. By direction of the acting Secretary of War, will report in person at 11 o'clock, A.M., October 18, 1888, to Brig. Gen. John R. Brooke, president of the retiring board in session at Omaha, Neb., to give testimony in a case pending before the board. Upon completion of this duty he will return to his proper station. By paragraph 9, S. O. 212, A. G. O., September 12, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING SEPTEMBER 15, 1888.

LUNG, GEORGE A., assistant surgeon. Ordered to Receiving-ship "Vermont," Navy Yard, New York.

ERRATUM.

In the obituary notice of the late Dr. G. D. Townshend, it should have been stated that he was a graduate of the University of Pennsylvania, and received his degree in 1865.

BOOKS AND PAMPHLETS RECEIVED.

A Eulogy upon Cornelius Rea Agnew, read before the New York Academy of Medicine, by T. Gaillard Thomas, M.D. June 7, 1888.

Considérations Cliniques sur le Traitement du Catarrhe Chrodique des fosses Nasales. Par le Docteur Léonce Lacoarret, a Salies-de-Béarn. Paris. MDCCCLXXXVIII.

Report of Ten Cases of Pleuritic Effusion with Aspiration of the Chest — Fourth Series — With a Case of Injection of Carbolized Iodine into a Lung Cavity. By F. Peyre Porcher, M.D., one of the physicians to City Hospital, Charleston. Reprint. 1888.

A Case of Poisoning by Sulphate of Atropia; Recovery. By Blewellyn Eliot, M.D., Washington, D. C. Reprint. 1888.

New York State Board of Health. Eighth Annual Report to Legislature, February 27, 1888. Troy Press Co. 1888.

Therapeutics: Its Principles and Practice. By H. C. Wood, M.D., LL.D., Professor of Materia Medica and Therapeutics, and Clinical Professor of Diseases of the Nervous System, in the University of Pennsylvania. A work on medical agencies, drugs and poisons, with especial reference to the relations between physiology and clinical medicine. Seventh edition of a Treatise on Therapeutics, rearranged, rewritten and enlarged. Philadelphia: J. B. Lippincott Co. London: 10 Henrietta St. 1888.

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Beginners in Chemistry; a Text-Book especially adapted for Students in Pharmacy and Medicine. By W. Simon, Ph.D., M.D., Professor of Chemistry and Toxicology in the College of Physicians and Surgeons, Professor of Chemistry and Analytical Chemistry in the Maryland College of Pharmacy, Baltimore, Md. Second edition, revised and enlarged; plates and illustrations. Philadelphia: Lea Brothers & Co. 1888.

Pathogénie et Traitement de la Kérato-Conjonctivite Phlycténulaire (Ophtalmie des Scrofuleux). Par le Dr. V. Augagneur, Agréré a la Faculté de Médecine, Chirurgien en Chef (Désigné) de l'Antiquaille. Lyon: 1888.

Sur la Pelade: Nature, Transmissibilité, Origines, Modes de Propagation et de Transmission, Prophylaxie Publique et Privée. Par M. Ernest Besnier, Membre de l'Académie de Médecine. Médecin de l'Hôpital Saint-Louis, etc. Paris: 1888.

Original Article.

SHOCK.[1]

BY DAVID W. CHEEVER, M.D., OF BOSTON.

THE operative surgery of our time has annulled pain temporarily, arrested hæmorrhage permanently; averted septic absorption. It has not prevented shock. This is still a cause of much fatality. It is the object of this paper to inquire whether modern surgical procedure has *diminished* shock; wherein it fails to do so; and to suggest improvements of its defects.

What is shock?

When any one gropes his way in a dimly lighted passage, and meets unexpectedly a strange person at some turning, he experiences a start, a mental apprehension, his heart turns over, flutters, but at once recovers its balance. Pursuing his path, if he now, in descending, misses a step in the dark, he has a greater shock to his nerves, he braces himself, flutters, sweats, or is chilled. If he falls and bruises himself moderately, he has vertigo, nausea, cold sweat, pain. If he falls and breaks open a joint, he has syncope, epileptiform convulsions, nausea, fluttering pulse, sweat, pain. If he injures himself more severely, he has unconsciousness.

This is a simple description of the degrees of shock:

Apprehension,
Fluttering,
Sweating,
Chilliness,
Pain,
Vertigo,
Nausea,
Faintness,
Convulsions,
Unconsciousness,
Collapse.

The phenomena of a fainting-fit are the phenomena of shock. Sudden, disagreeable, painful, destructive impressions produced on the surface or efferent nerves, and affecting the brain; thence the ganglionic system; then the heart, the stomach, the skin; and thus the brain, at last.

Moderate shock terminates in reaction. This is the *recoil* of the system. It restores the balance; but the pendulum which marks the nervous force, swings back beyond the normal line. We have temporary fever, flush, full pulse, excitement.

Severe shock is more lasting. The pulse vibrates, intermits, flags, rallies, flags again, is soft, compressible, uncertain; faintness is constant, but partial; vomiting occurs; cold extremities; dilatable pupils; pallor; imperfect reaction; very slow recovery; a condition where a feather turns the scale against the patient.

If now an operation is done, we have renewed shock, prolonged shock, secondary shock; a matter of days rather than hours; persistent nausea; exhaustion; lowered temperature; diarrhœa; imperceptible and gentle death. Or, if an old person, that state known as prostration with excitement; typhoidal delirium, a dusky flush over the malar bones, dull eyes, intermittent pulse, jactitation, exhaustion, death.

[1] Read before the American Surgical Association; at the First Triennial Congress of American Physicians and Surgeons, at Washington, September 20, 1888.

Primary shock, reaction; early and perfect; or slow and imperfect. Secondary shock: prostration, nausea, excitement, collapse. Loss of blood, from accident or operation, adds to the shock or complicates its symptoms.

Jar, crushing, mutilation, pain, cutting, bleeding, chilling, all act on the nervous centre; react on the ganglia, the heart, the power of breathing, the temperature, the consciousness, the life.

Given then the problem and the phenomena of shock, what particular influences have the operative procedures of *modern* surgery upon them?

They may be summed up in three points:

The effects of anæsthetics;
The effects of the operations;
The effects of the dressings.

These all belong together and affect each other.

Anæsthetics annul pain, but end in nausea.

Operations under anæsthetics are needlessly prolonged and exhausting.

Modern dressings are tedious and chilling.

Have we lessened, or added, to shock by modern surgery?

Pain and bleeding are *less*. Slow cutting, nausea, exposure, low temperature are *more*. Primary shock is diminished: secondary shock is increased.

Formerly the time consumed in an operation was short. An amputation was hurried, now it is deliberate; an abscess was incised, now it is aspirated and curetted; a joint injury was cut off, now it is excised; the peritoneum was peeped into, now it is boldly explored; the bladder was cut for stone, now it is a prolonged crushing and washing; a breast was amputated, now the axilla is formally dissected. The old method was a matter of minutes; now it is one of hours.

Patients are frequently from one and a half to two hours on the operating table; and three hours in recovering consciousness so that they can swallow. Do we realize what this prolonged cutting, pinching and dissecting mean to the nervous system after anæsthesia is past? Does not the long exposure of the great veins to the air, in dissecting tumors, increase coagulability and future infarction? Can the peripheral nerves be lacerated *seriatim* without exhausting their constitutional irritability? It is recognized that long continued and large dissections on the front and sides of the neck are especially fatal.

Operations of *secondary* magnitude are now so prolonged that I have repeatedly seen patients die of primary shock, or *repeated shocks*, where the patient was one to two hours under the knife. It is said that he had not the vitality to resist. He had not; but consider what a perineal section, scooping out a uterine tumor, curetting a bladder, removing glandular enlargements, sometimes involve in time, in exhaustion, in capillary oozing, in shock.

Equally unphilosophical and fatal is the practice of operating in cases of primary shock before reaction has come on. An amputation is begun in half-life, and ended in death. Especially difficult to decide are the cases where the patient reacts imperfectly, and relapses. These cases are easily made fatal, and only saved by quick amputations, slight exposure and short anæsthesia. The golden moment of fairly established reaction must be seized, before traumatic fever sets in. This moment comes in from six to eighteen hours after the injury, or it never comes.

It should be considered an *axiom* that anæsthesia does not diminish existing shock, but only annuls the additional shock which the pain of cutting produces. It prevents the pain of an operation from increasing the shock which may be present from an injury. It prevents the pathological case from experiencing the shock produced by the pain of cutting out a tumor; it does *not* prevent the secondary shock of the mutilation; it adds to secondary shock if the anæsthesia is prolonged.

In feeble subjects the lack of nourishment which precedes an operation, desirable on account of safe anæsthesia, is much aggravated by their inability to retain food after the operation. This has an important influence in bringing about collapse.

Lowering of the bodily temperature is constant after an operation under anæsthesia. The thermometer frequently falls to 97°, to 96°, and after severe and prolonged operations, to 95° Fah. This is a very serious matter, and has a marked influence in delaying reaction from shock. This chilling of the vital heat is induced, first, by anæsthesia, which, if prolonged, ends in a dripping sweat; next, by careless exposure during an operation. Then also it is largely due to antiseptic irrigations, to vapor douches of similar agents, to applications of cloths wet in corrosive or carbolic solutions around the site of the operation. The axillæ, the neck, the thorax and the abdomen are especially prone to deleterious chilling in this way.

Evaporation is a great factor in reducing heat; and this is constantly occurring on the body of the patient, in a warm atmosphere, during a prolonged operation. Especially is this dangerous when the peritoneal surfaces are exposed; evaporation then is very rapid and very extensive.

Warm douches and washes give as great a subsequent chilling as cold ones, as all experience who take a tepid bath.

The sufferer is frequently allowed to lie about too long, under an anæsthetic, waiting for his turn, in busy hospital practice.

The surgical toilette of wounds, in the modern modes of dressing, is depressing, exhausting, devitalizing.

Finally, comes the greatest evil of all, nausea. Nausea is one of the marked symptoms of severe shock, primary or secondary. Unfortunately, anæsthetics very frequently produce this as a secondary effect.

Persistent vomiting and retching mark the slow sinking and collapse of secondary shock after capital operations. Continued nausea is one of the worst of symptoms; begun in pain, and shock, it recurs after anæsthesia, and continues as the most dangerous factor in preventing reaction.

What can we do to prevent or diminish shock?

(1) Wait for reaction.

(2) Never neglect to calm those suffering mental shock by a cheerful word and personal presence.

(3) Give alcohol, either spirits or wine, a quarter of an hour before the anæsthetic.

(4) Make the anæsthesia short; never begin it until everything is ready; suspend it during the less painful dressings. Consciousness returns *tardily*. We keep up the anæsthetic longer than is necessary.

(5) As rapid an operation as can prudently be done.

(6) As short a dressing as is practicable.

(7) As a cardinal point, avoid *chilling* the patient.

To promote reaction after the operation:

(1) Persistent and *carefully* applied *dry* heat. (Be *over*-careful about accidental burns.)

(2) Liquid nourishment, combined with a stimulant and a little laudanum, by enema.

(3) Subcutaneous injection of brandy.

(4) Aromatic spirits of ammonia by the mouth. Champagne is sometimes retained when other things are rejected.

(5) Black coffee and brandy, the stimulant *par excellence*, when it can be retained on the stomach.

(6) Quiet: a horizontal, or more than horizontal position; sleep; assurance that all is over, and doing well.

Modern surgery has won *three* great triumphs:

It substitutes sleep for pain.

It averts secondary hæmorrhage by the animal ligature.

It prevents fermentation by germicidal applications.

Can we add a *fourth*, by stilling the nervous system, and averting, or diminishing secondary shock?

Reports of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THE First Triennial Meeting of the Congress was held in Washington, September 18, 19, and 20, 1888.

FIRST SESSION, TUESDAY.

The meeting to receive the report of the Executive Committee and for Organization was held at one P. M., Tuesday in the Grand Army building.

The meeting was called to order by DR. WILLIAM PEPPER, Chairman of the Executive Committee, who spoke as follows:

"On behalf of the Executive Committee I have to announce the manner in which we have discharged our responsible duty. The present meeting is the result of prolonged deliberation which began to take shape more than four years ago, before the attention of the medical profession became occupied with preparation of the meeting of the International Medical Congress, but all action was deferred in order that there should not be the semblance of interference with that important meeting. This delay has served to render more conspicuous the necessity for this organization.

"In order to produce the best scientific results, it is essential that the members in attendance shall be reasonably limited, and that as far as possible the same men shall attend successive meetings, securing a continuity of intellectual life and activity. A large proportion of those interested in the development of such an organization, are, as I am myself, warmly attached to the American Medical Association, and determined to exert their influence to maintain and promote the means of this great national organization.

"Your committee ventures to hope that their provisions will meet the unanimous approval of the Congress. We have recommended that the sessions shall be triennial. We have jealously guarded against the admission of parliamentary business, since the functions

of the Congress are designed to be absolutely or exclusively scientific. We have also guarded the independent sovereignty of each participating society.

"Lastly, the Executive Committee has reached the conclusion that the selection of the President of each Congress shall be entrusted to the Executive Committee then in office. Close study of the conditions of this Congress has led the committee to feel that if this organization were to have the effect of favoring the multiplication and subdivision of special societies, it would be nothing less than a calamity. We have therefore provided that the admission of new associations shall be secured only by the unanimous vote of the Executive Committee.

"It remains only to add that in exerting the privilege of selecting a President for the first Congress of American Physicians and Surgeons, we feel that we have been guided to the choice of a man, whose admirable personal character, whose high attainments, and whose illustrious services in the cause of literature, of science and of the entire medical profession mark him as entitled to this great honor and distinction.

"It gives us therefore the utmost gratification to present to you our President, Dr. John Shaw Billings, and to announce that the Congress of American Physicians and Surgeons is now duly organized."

President Dr. J. S. Billings then took the Chair, and responded in a brief address.

THE ADDRESS OF WELCOME

was delivered by Dr. Samuel C. Busey, of Washington.

The consideration of

THE BY-LAWS

was next taken up.

(1) This organization shall be known as the Congress of American Physicians and Surgeons.
(2) It shall be composed of National Associations for the promotion of medical and allied sciences.
(3) It shall hold its sessions triennially in the City of Washington, D. C.
(4) The officers of the Congress shall be a President, Vice-Presidents, a Secretary, a Treasurer, and an Executive Committee.
(5) The President shall be elected by the Executive Committee, of which he shall be *ex officio*, member. He shall preside at the sessions of the Congress. He shall deliver an address.
(6) The Presidents of the participating societies shall be *ex officio* the Vice-Presidents of the Congress.
(7) The Secretary and Treasurer shall be elected by the Executive Committee. They shall be *ex officio* members of the Executive Committee.
(8) The Executive Committee shall be composed of one member from each participating society: and said members shall be elected by the various societies at the next annual meetings subsequent to the Congress. It shall be charged with all duties pertaining to the organization of and preparation for the ensuing Congress, including the election of all officers, and for a Committee of Arrangements. It shall superintend the publication of the Transactions of the Congress.
(9) The expenses of the Congress shall be divided between the participating societies in proportion to their membership.
(10) The admission of new Associations to participation in the Congress shall be by unanimous vote of the Executive Committee.

These by-laws were unanimously adopted.

EVENING SESSION, TUESDAY.

President, Dr. J. S. Billings, in the Chair.

THE MEDICAL RELATIONS OF ACUTE INTESTINAL OBSTRUCTION,

by Reginald H. Fitz, M.D., of Boston.

The subject of this paper was the diagnosis and medical treatment of the acute internal, mechanical varieties of intestinal obstruction. The only causes recognized were strangulation from adhesions, vitelline remains, peritoneal slits, pockets and rings; intussusception, twists and knots; abnormal contents, strictures and tumors. The evidence presented resulted from an analysis of 295 cases collected from medical literature since 1880.

The most constant symptoms of obstruction were shown to be pain, vomiting, tympany and tumor. Stoppage of the bowel was not regarded as the most essential symptom in diagnosis, since frequent loose stools characterize intussusception and may occur in other varieties of obstruction. Too much attention directed to this symptom leads to erroneous diagnosis, since it is of frequent occurrence in peritonitis and often results in irrational and injurious treatment.

The physician is called upon to decide whether the given case is one of acute obstruction; then where its seat and what its cause, and finally what is to be done. The evidence offered, showed that the diagnosis was to be made by excluding the various causes of peritonitis. Its seat in the large or small intestine was to be determined by injections under high pressure when necessary. The variety was for most practical purposes, an intussusception; or a twist of the large intestine and strangulation, or gall stones in the small intestine. The differential diagnosis depended on the relative frequency of these varieties, the age of the patient, the antecedents and immediate symptoms.

The treatment consisted in the attempt to relieve intussusception of the large intestine by forced injection under anasthesia with massage, and to treat obstructing gall stones by opium, possibly by the aid of laxatives and electricity. All the other varieties of acute obstruction require surgical treatment. The latter treatment is also necessary on or before the third day in cases of intussusception not yielding to forced injections and in gall stones when the symptoms become urgent.

THE SURGICAL TREATMENT OF INTESTINAL OBSTRUCTION,

by N. Senn, M.D., of Milwaukee.

He claimed at the very beginning that all cases of true intestinal obstruction are, in every sense of the word, surgical affections. Intestinal obstruction is present when from mechanical or from dynamic causes the intestinal canal becomes completely or partially imperforate, interfering completely or partially with fæcal circulation. It is important that a distinction be made between the cases due to mechanical causes and those due to dynamic causes. In the former the surgeon is expected to modify the mechanical cause. In the other the surgical treatment is limited to diminishing intra-abdominal pressure. Cases of internal intestinal obstruction should be considered in the same light as cases of strangulated hernia. The time that such a case may safely be permitted to go without operation varies. In some, twenty-four hours will suffice for the occurrence of irreparable pathological changes; in others a much longer time may be allowed to elapse. Operation should be performed as soon as the diagnosis is made.

The surgical resources in the treatment of internal obstruction were taken up seriatim.

Irrigation of the Stomach was first referred to. All forms of intestinal obstruction, no matter what the cause, are aggravated by anything that increases the

hydrostatic pressure on the proximal side of the obstruction. Irrigation of the stomach relieves this, and also diminishes the intra-abdominal pressure. It not only empties the stomach, but evaçuates the contents of a number of feet of the intestine. It, however, will not do to rely upon this as a radical measure, except when the cause of obstruction is of a temporary character. This measure should always be performed before operation, as it prevents vomiting. An antiseptic solution should be used in the irrigation.

Distension of the Intestine with Fluids. The mechanical effects of this measure are limited to the colon. The fluid does not pass beyond the ilio-cæcal valve. Why should we not in these cases resort to the lightest possible substance known, hydrogen gas, which is harmless, readily obtained and aseptic. A pressure of one-fourth to two pounds to the square inch overcomes the resistance of the ileo-cæcal valve, and forces the gas from the anus to the mouth. A pressure of eight to ten pounds to the square inch is required to produce palpable injury of any of the coats of the intestine. If perforation takes place there is at once a positive indication for opening the abdomen. The fact that perforation has occurred is known by the disappearance of the liver dulness.

Manual Exploration by the rectum is a useful diagnostic and therapeutic measure where the obstruction is below the sigmoid flexures, provided the surgeon has a small hand.

Taxis and Massage should be limited to cases where the obstruction is due to intra-mural causes, and to a few cases of invagination. Uniform uninterrupted equable *pressure of the abdomen* is useful in preventing hyper-distension in these cases, especially where dynamic causes are feared.

Enterostomy, so frequently practised in the past, he hoped, had become very nearly obsolete. It should only be employed where it is clear that the patient will not be able to pass through the ordeal of laparotomy.

Lumbar Colotomy. In cases where the operation was formerly employed we can often, by uniting the portion of bowel above the obstruction with that below by means of decalcified bone plates, avoid the necessity for colotomy. I have specimens showing that a dilated, congested bowel can be repaired when excluded from the fæcal circulation in this way.

The author had in the past eight months preformed gastro-enterostomy in four cases by this method. In all of these cases the operation was a success, although in one case the patient died because the operation had been postponed too long. In one case following, the advice of Leucke had been followed, and the first presenting portion of the bowel had been fastened to the stomach. The patient continued in good condition for nine days, when symptoms of obstruction came on, and he died in three weeks. It was found that the connection with the bowel was eight feet below the pyloric orifice, and that the movements of the bowel had produced a sharp flexion of the intestine, causing obstruction. Gastro-enterostomy in incurable carcinoma is a safe operation, and one which the surgeon owes to all such patients.

[The time allotted to this portion of the discussion having expired, the speaker was unable to complete his remarks.]

DR. ARTHUR DURHAM, of London, had taken much interest in this subject. There is no class of cases which are more serious or more dangerous than those of intestinal obstruction. I agree with Dr. Senn, that usually in these cases the sooner the surgeon is called the better. As soon as the diagnosis is made the operation should be performed. In some cases it should be done before a positive diagnosis is reached, and in order to clear up the diagnosis. Under such circumstances the surgeon must be prepared to meet the indications that present themselves. In trying to reach a diagnosis the probabilities in favor of this or that condition, based upon statistics, should not influence us; but the case should be studied on its own merits, and treated on the indications before you. In regard to the injection of hydrogen gas, he suggested the possibility of the formation of explosive compounds, and thought that atmospheric air might be substituted.

He recommended that in cases of acute obstruction in which there is reason to believe that the cause is in the small intestine, provided the symptoms are severe and urgent, the proper thing, even if an absolute diagnosis has not been made, is to open the abdomen and search for the cause and relieve it as best you can. On the other hand, where the cause is in the large rather than the small intestine, there is not the same degree of urgency. He strongly advocated lumbar colotomy in certain cases. In some cases after colotomy there has been a gradual restoration of the bowel and the patient has recovered completely.

DR. WILLIAM ORD, of London, admitted that there was often a great deal of difficulty in the diagnosis. He was in favor of the views of Dr. Fitz, and claimed a little time before resorting to operation. In some of these cases under the use of hypnotics and time the cause of obstruction had disappeared. Where, however, there is mechanical obstruction the case must sooner or later go into the hands of the surgeon. This time should be a short one. The operation is a serious one, especially in people over fifty years of age. I have often seen the operation performed, and frequently fail in those cases where there was the most reason to expect success.

MR. THOMAS ANNANDALE, of Edinburgh, said that these cases of obstruction should be divided into two classes, the acute and the chronic. In acute cases medical measures should be tried, but not continued too long. If the symptoms are urgent the surgeon should be called at the end of forty-eight hours; the sooner the abdomen is opened the better. In the chronic cases we may wait a considerable time, even until the symptoms become acute. The treatment should then be applicable to a case of acute obstruction. I have largely given up lumbar colotomy, which I have employed more particularly in rectal obstruction, and resort to inguinal colotomy as a simpler and not more serious operation in most cases.

DR. N. SENN, in closing the discussion, stated that there was not the least danger in the use of hydrogen gas. He had performed many experiments on animals and had used the procedure in man. In cases of intestinal perforation it aids the diagnosis, and allows the surgeon to determine whether or not all the openings have been closed. In a recent case of gunshot wound eleven openings near the ileo-cæcal valve were closed, and a twelfth was revealed by the hydrogen gas at the point where the peritoneum is reflected from the bowel to the bladder. The patient is doing well one week after the operation.

THIRD SESSION, WEDNESDAY EVENING.

CEREBRAL LOCALIZATION IN ITS PRACTICAL RELATIONS,

by CHARLES K. MILLS, M.D., of Philadelphia.

In his introductory remarks, the speaker referred to the fact that from the clinical observation of practical physicians sprung the conceptions out of which developed the science and art of cerebral localization. Allusions were made to the discoveries of Bouilland and Broca on speech localization; to the announcement by J. Hughlings Jackson in 1864, that certain convolutions superintended the delicate movements of the hand, which were under the immediate control of the mind; and to Hitzig's researches having originated from his observing certain ocular movements during galvanization of the heads of his patients. Brief reference was made to the history of American work in localization; to the investigations, in 1874, of the New York Society of Neurology and Electrology; to Putnam's discovery that irritation of the white matter beneath definite cortical centres produced movements similar to those caused by irritation of the centres themselves; to the labors of Wood and Ott on the heat centres; and to the light thrown by these investigations upon the mechanism of fever and the action of drugs upon different forms of high temperature.

Before taking up the surgical aspects of the question, the speaker briefly discussed some of the practical results wrought by cerebral localization for psychological medicine and medical jurisprudence; for general symptomatology and diagnosis; and for medical therapeutics and technique.

Trephining for cases of insanity, particularly when guided by the rules of localization, was briefly considered. Two of the recent cases of brain operation reported by Bennett and Gould, and by Macewen, were cited as possibly opening a new field for surgical interference in insanity, the excision of cortical areas as a method of treatment when certain subjective phenomena, such as hallucinations of sight or hearing, can be given a local habitation in the brain.

In turning to the surgical aspect of cerebral localization in its practical relations, the author stated that his remarks would be chiefly concerned with questions of diagnosis. He considered, first, the forms of disease and injury in which cerebral localization is a valuable aid to diagnosis; and, secondly, the topographical diagnosis of the parts of the brain accessible to surgical interference, with some sources of error in such diagnosis. The forms of disease in which such diagnosis has been used are intra-cranial tumors, cysts, fractures, hæmorrhages, abscesses, and discharging cortical areas.

In considering the localization of brain tumors, Dr. Mills referred to twenty cases of autopsies occurring in his own personal experience, in about one-half of which the tumors were in surgically accessible areas, and in, at least, one-fourth of which successful operations might have been performed. He advocated from this experience the excision of old gummata, and also, in special cases, of tubercular growths. The value of localization was shown in cases of fracture when the extent of the unseen damage could not be told by the position and character of the visible lesions.

Of the different forms of intra-cranial hæmorrhage, subdural, cortical, and intra-cerebral were most amenable to localizing diagnosis. The rules for the local diagnosis of these forms of hæmorrhage were then given. Dr. Mills advocated the performance of trephining in exceptional cases of hæmorrhage into the ganglia and capsules, cases in which symptoms indicated that the bleeding had not broken into and inundated the ventricles. From the sections, the best site for operation in such cases, all things considered, would be in the anterior portion of the first or second temporal gyrus. He favored Hughlings Jackson's suggestion of excising localized cortical areas, even when coarse lesions could not be made out, in cases of spasm, beginning locally or deliberately.

The inaccessible areas had been narrowed down by the venturesome surgical explorer, and had become reduced to the middle regions of the base and its bordering convolutions, the corpora quadrigemina, and the pons oblongata.

The characteristics of localizing symptoms were described as phenomena of irritation, destruction, instability, pressure, invasion, and reflex action. Signal symptoms and the serial order of motor phenomena were discussed. Briefly, in certain regions of the brain, an accurate topographical diagnosis could be made with great certainty from positive localizing symptoms. These brain areas include the entire motor zone, in which are embraced the motor or emissive speech area, the region of Broca; the visual area in the cuneus, giving lateral hemianopsia, and the intra-cerebral visual tracts; possibly, also, the angular gyre and the lateral surface of the occipital lobe. In other regions of the encephalon the topographical diagnosis could be made with sufficient accuracy, even for surgical purposes, by the study of the positive symptoms, with, in addition, the application of processes of exclusion and successive differentiation. Particular stress was here laid upon the importance of pressure and invasion symptoms. These areas for approximately certain topographical diagnosis include the cerebellum, the pre-frontal lobe, the temporal lobe, and even certain cranial new districts, as the auditory and facial, when the lesion could be localized within the cranium, between the superficial origin of the nerves and their entrance into their foramina or canals of exit.

Motor localization has become almost an exact science. The latest physiological research bearing upon the subdivision of the motor area, and the light thrown upon the question by surgical operations, were discussed. It was held to be imperative for the neurologist and surgeon to have exact knowledge, not only of the anterior and the posterior limits, but also of horizontal subdivisions of the motor zone.

The old method of subdividing the motor zone into three elliptical or circular areas from above downward was considered insufficient; but the neurologist should be able to locate for the surgeon, from a study of motor phenomena, at least seven or eight positions for trephining; these positions being selected by a close study of the initial or signal symptoms, the serial order of movements, and also of the amount and character of the temporary paralysis after the seizure, and the method of extension of the persisting palsy. Reference was made to operations performed through accurate localization in these areas.

The view of Ferrier as to the localization of the centre for ocular and head movements in the second frontal gyre was concurred in, and observations were cited in its support; when turning of the head and

eyes was the starting point of the spasm, this localization was probably indicated. The fact that cortical oculo-motor palsies were not present as a persistent condition, even with definite lesions of the second frontal gyre, was explained by the intimate and peculiar connections of the oculo-motor nuclei at the base; they do not persist for the same reason that paralysis in the upper distribution of the facial nerve is so seldom permanent. He believed that there was a special centre for the orbicularis palpebrarum movements, probably below and adjacent to the oculo-motor centre.

Dwelling upon the sources of error in motor localization, the questions of reflex spasm, of unilateral convulsions due to uræmia, lead, and other toxic agents, and to hysteria and hystero-epilepsy, were briefly discussed. Sufficient diagnostic difficulties are still present to make it important, in the light of the tremendous impetus towards operation, to carefully examine all questions of differential diagnosis. In certain spasmodic affections the resemblance between those clearly of reflex origin and those as demonstrably central were very striking. Trigeminal epilepsy, whether dural, facial, dental, nasal, pharyngeal, laryngeal, or of whatever local origin, might cause unilateral convulsions, or even monospasm. Dural epilepsies are especially worthy of attention, as shown by the researches of Dupuy, Brown-Séquard, Burdon Sanderson, the New York Society of Neurology and Electrology, Duret, Bochefontaine, and Francois-Franck. Franck has made a careful comparison and contrast of cortical epilepsies with those which are reflex and toxic, including those which are due to irritative lesions of the dura mater.

The author referred to five cases in his own experience in which operations had been performed for epilepsies apparently reflex in character, two in which spicules of bone had been removed from the dura mater, one in which an old inflammatory lesion of the membranes and cortex from traumatism was present, and two in which scalp cicatrices were removed. While fearing, with Franck, that we are not always able to make a trenchant separation between reflex and cortical epilepsies, some points of separation were indicated. True Jacksonian epilepsy, Dr. Mills believed, was sometimes reflex in origin; that is, it was established by intense, persistent, peripheral irritation. and, even after the irritation had been removed, the cortical discharge continued. Herein, perhaps, lay the explanation of Jacksonian spasm without coarse lesion, and herein also, perhaps, was to be found the justification for the excision of cortical discharging areas. The author referred to a case in which epilepsy clearly of Jacksonian type was just as clearly due to a fibroma involving a nerve-trunk on the palmar surface of the hand, and in which the patient was cured by removal of the growth.

With reference to sensorial localization, cutaneous and muscular, the views of Horsley and Schäfer with reference to the limbic lobe, were accepted in part. The speaker believed that the evidence was becoming stronger every day in favor of the existence of a zone for the sensation or touch, pain and temperature separate from cortical motor areas. Collections of cases, such as those of Starr, Petrina and others, which were supposed to indicate that the sensory areas coincide largely with those of motion, were not regarded as overcoming the positive evidence of decided destructive lesions of the cortical motor zone without any sensory disturbance. From a study of his personal cases, he had concluded that they did not support the doctrine that the motor and sensory areas coincide. Notes of these cases were given, and also cases from other reporters. He believed with Bechterew, that the loss of sensation in animals who have had the motor area destroyed was apparent and not real. Some light had been thrown upon this disputed question by careful examination of patients after operation, particularly when certain definite dural areas had been clearly excised. Reference was made to the cases of Horsley, Weir and Seguin, Lloyd, Deaver, and others. The speaker believed that these observations and experiments pointed clearly to the theory that the motor zones were motor, alone in function. His view was that the region for general sensation including touch, pain, temperature and perhaps pressure, location and muscular sense could be divided into special areas for the various distant portions of the body and that these centres lay alongside and had close anatomical and morphological relations with corresponding motor centres, but that they were not identical with them. He located these sensory areas in the gyrus fornicatus, the hippocampal gyre, the precuneus and the lateral postero-parietal region.

The practical conclusion was that the neurologist and surgeon must depend upon motor symptoms alone in fixing the site for operation in cases where the motor lesions were definite. When positive sensory symptoms were present they might sometimes serve to aid in locating more exactly the position for operation, but the data were not sufficient for positive reliance.

The question of morphological peculiarities of the human brain was briefly alluded to as having some practical bearing upon the subject under discussion. The position of the so-called angular gyre and aberrations in the parieto-occipital region were more particularly discussed. Even the fissure of Sylvius, the central and parieto-occipital fissures sometimes present considerable variation, but as a rule, such aberrations were not confusing in operating on the motor region after the methods of Broca, Thane and others.

Dr. Mills concluded by saying that the discoveries in cerebral localization with the achievements in antiseptic surgery constitute the greatest triumphs which adorn the history of the noble science and art of medicine.

CEREBRAL LOCALIZATION IN ITS SURGICAL RELATIONS,

by ROSWELL PARK, M.D., of Buffalo, N. Y.

The essay was devoted purely to the surgical aspects of the subject, and omitted consideration of those cases in which operation is dictated by a study of the subjective rather than of the objective features.

Cerebral Topographical Anatomy. The areas which most concern the surgeon are those which cluster around the fissure of Rolando. A few bony prominences deserve attention in this connection: that of the point of the nose known as the glabella; the external occipital protuberance, known also as the inion, the point of the vertex half-way between these two, the bregma; the external angle of the orbit, the tip of the mastoid process, and the lower border of the alveolar process of the upper jaw. The fissure of Rolando has its upper end about five centimetres back of the bregma, but does not run quite in the middle line, its

lower end lies about one-half a centimetre behind the auriculo-bregmatic line and a little above ani maginary line projected backward from the superciliary ridge, thus the lower end of this fissure will be found about six centimetres above and a little behind the external auditory canal; or about one inch behind the bifurcation of the fissure of Sylvius. In regard to the convolutions, it must be stated that lesions of the dura mater overlying motor areas are not always to be distinguished from lesions in the cortex beneath. It is enough for the surgeon that a lesion of some kind can be located with reasonable accuracy. It matters not whether this is an old irritative lesion; an acute suppurative process between the bone and the brain, or an abscess or tumor of the brain itself. The indication for exploration is just as strong in either case.

When and Where can one Trephine with Safety? The safest rule is to first apply the trephine over those areas which do not overlie large vascular channels. Afterward the opening may be extended in any direction and to any required extent. The greatest hesitation is with regard to opening one of the sinuses. Two dangers attend such an accident; one, fatal air embolism, the other, profuse hæmorrhage. The former danger is almost a theoretical one, and the other may be overcome by plugging the sinus or closing its wound with a fine needle and suture.

Cerebral or Cerebellar Abscess. Bergmann has shown that abscess of the brain has but one result, death, and that the surgeon's knife offers the only relief. So far as we know there is no such thing as idiopathic abscess of the brain; it is always the result of some external wound of the head or some extension from diseased surrounding bone. The only exceptions to this statement are to be found in the case of pyæmic or tuberculous abscess. The symptoms of deep brain abscess may be divided into three groups according to causes.

(1) Those which are inseparable from indications of suppuration. Such are those disturbances which may follow any deep-seated foreign body. (2) Symptoms of increased intra-cranial pressure and of distended relations. (3) Special symptoms by which the locality of the disturbance may be ascertained.

As long as the gray matter is undestroyed, the collection of pus may assume large dimensions, and still no intense motor symptoms appear. Local elevation of temperature over the abscess is a symptom of importance when present, but its absence need not negative a diagnosis if made on other grounds. Wernicke has stated that there is a peculiar disturbance of speech which points to lesion of the temporal region. This is the confusion of correct with incorrect words. In the general diagnosis of cerebral abscess, it is to be remembered that there usually is a latent period which may continue for an indefinite period. The stage of active symptoms is usually ushered in by more or less headache; slight rise in temperature; local or motor symptoms can only be expected when the abscess is in the motor area of the brain.

In operating for abscess of the brain, operators until recently have satisfied themselves with incising the dura and doing nothing more. With the introduction of aspirating methods, the hollow needle came to be used for brain exploration. The dangers of this procedure are certainly small. The danger of hæmorrhage has been over-estimated. A temporary tampon will control deep hæmorrhage, while in bleeding from the pia mater the vessels may be secured with ligatures or serefines. In brain abscess consequent upon middle ear disease the best point to trephine according to Bergmann, is above and behind the ear. Macewen proposes a second counter-opening on a level with the floor of the abscess.

Brain Tumors. The principal features of these growths which produce symptoms are, location, size, character, rapidity and manner of growth and extent to which they effect surrounding brain tissues. Considered in their surgical relations we may, with Bergmann devide them into (*a*) the circumscribed or encapsulated, and (*b*) the infiltrated or diffuse around which as a rule, there is a zone of softening. A third class may be mentioned; that is, those growing from the interior of the cranium, from the bone or dura.

If a reasonably satisfactory diagnosis can be made, it must be indeed an extensive growth of the cranial vault, which shall contra-indicate operation. The question of what and how many brain tumors are operable has been best answered by White. He found in one hundred brain tumors met with in the dead room of Guy's Hospital, that only nine could have been removed, — one tuberculous nodule, four sarcomas, two undetermined tumors, one cyst and one myxoma. Nine per cent. could have been attacked, providing a fairly accurate diagnosis had been made. Of these nine tumors, five were located in the cerebellum, one in the frontal lobe and one in the extremity of the occipital. It is doubtful whether these seven could have been recognized accurately enough during life to justify operation; while the myxoma was impossible to diagnose. It is thus seen that by no means all tumors which can be diagnosed can be deemed suitable for operation.

Operation for Intracranial Tumors. The head should be shaved two or three days before operation, washed with green soap and ether, and antiseptic compresses applied. Chloroform should be, as a rule, the anæsthetic on account of its contracting influence on the vessels of the brain. Morphia hypodermically and ergot may be resorted to for the same purpose. The author suggested that after localizing the lesion, a small, disinfected, headless tack be driven through the scalp into the bone at the point determined upon. After the dissection of the external flap, this will point out accurately the point to be first attacked. In order to prevent hæmorrhage, the author had found a spray of antipyrine solution (1 : 40) of service. The semilunar flap is the proper shaped one to raise. Its apex should be in such a position as to allow of drainage with the patient on his back. The periosteum should preferably be raised with the flap. The use of the trephine is preferable to the hammer and chisel. Since Macewen has taught us how to preserve the fragments of bone and restore them to their place, his method has been widely tried and universally commended. The dura mater should be incised around a large part of the area at a distance of one-eighth to one-fourth inch from the edge of the bone. The appearance of the dura is sometimes a guide to trouble beneath. In recent cases, it is sometimes highly vascular; in old cases, it may be yellowish or discolored, wherever adherent it should be freely excised. Horsley claims that marked protrusion of the dura indicates pathological intracranial tension. The color of the brain should be noted, remembering that the cerebellum has normally a different appearance from the cerebrum. Sometimes where there is uncertainty as

to which convolution is the desired one, the battery may be employed. Where no indication of lesion is found, further exploration may be conducted with a small aspirating needle or a blunt probe.

Should a tumor be discovered, the incisions for its removal should be made perpendicularly to the cortex for the purpose of avoiding hæmorrhage and division of the conducting fibres. Removal of a layer of cortex whether normal or abnormal does not leave, as one might fear, a prominent gap with vertical sides, since in a short time the depressed portion is made to bulge almost to the level of the intact parts surrounding. In addition the cut edges are also slightly everted and if less brain is removed than bone, the edges are extruded into the opening in the skull; thus there is a continual normal tendency to hernia; but Bergmann and others have shown that this tendency to hernia-cerebri is in inverse ratio to the area of bone removed. Experience has taught that it is wise to remove brain tissue to an extent greater than was at first considered justifiable. In all operations for epilepsy, the portions of cortex nearest the evident lesion should be freely removed.

The matter of drainage must be determined according to the circumstances of the case. An abscess must be drained as long as pus is discharged. After the antiseptic removal of a tumor, the cavity should seldom be drained for more than twenty-four hours. The provision for drainage may be removed on the second day, and the wound dressed with reasonable pressure over the flap. Exudation naturally collecting in this cavity, will be retained and will give rise to some pain and disturbance, but so long as the symptoms from this are not severe, the wound may be left with confidence that the fluid will be reabsorbed, and that the pressure will be the best check to protrusion.

Dangers of the Operation. The principal immediate dangers are two: hæmorrhage and œdema. Hæmorrhage from the pia or from the brain substance is usually readily controlled, but disastrous hæmorrhage may occur from unexpected sources. When there is bleeding, a temporary tampon of iodoform gauze may be applied. The dural and skin flaps are laid over this and an absorbent dressing applied. At the end of forty-eight hours this may be removed and sutures inserted.

The second danger: that of acute brain œdema may be brought about either by increase of intra-arterial pressure or by obstruction of the venous channels of escape. Under this accumulation the brain becomes more sodden. Removal of a portion of the cranium is virtually a diminution of the pressure normally exercised on its contents and is often followed by reaction with production of excess of fluid.

The author had collected reports of sixty-three cases which were presented in summary and in tabular form. Seventeen of these terminated fatally although only five of these deaths could properly be attributed to the operation. Fifteen of the cases were abscesses, subdural or sub-cortical. In eleven cases the lesion was a tumor, exclusive of tubercular nodules. Of cysts properly speaking, there were twelve. The five other cases were of a miscellaneous nature. In three cases, the true character of the lesion was not revealed during the operation, and was only discovered at the autopsy. In two cases, in which no palpable or visible lesion was discovered at the time of operating, the symptoms which led to the performance of the operation were nevertheless relieved, though nothing but careful exploration was practised.

Of the sixty-three operations, seventeen were performed by American surgeons. Those who have themselves operated more than once are, with the number of their operations: Macewen, twelve; Horsley, eleven; Bergmann, four; Weir, three; Keen, three; and Park, three.

GENERAL DISCUSSION.

DR. DAVID FERRIER said that he took special pride and satisfaction in the fact that this subject had been assigned such an important place in this great gathering of the profession in this country. He had long cherished the idea that the determination of the functions of the brain would in time lead to the successful treatment by surgery of some of the most distressing ailments or our fellow-creatures. When he first broached the possibility of this he received little encouragement, but now cerebral surgery had become a distinct branch of the art of surgery. There is a great future for cerebral surgery. We must, however, be cautious lest we do things which our better judgment and larger experience may not consider altogether justifiable. While there have been many successes, yet there had been some failures. He alluded more particularly to cases of Jacksonian epilepsy. The discharging lesion has been removed in many of these cases without permanent cure. Care must also be taken that in curing one affection we do not induce a greater evil. There is yet much to be learned in regard to the functions of the brain, and in regard to the diagnosis of cerebral disease.

MR. VICTOR HORSLEY described briefly the results of his experiments upon the motor region. He believed, however, three functions were clearly represented: (1) the representation of the so-called tactile sense; (2) representation of the so-called motor sense; and (3) the great representation of movement. It is found that morphologically the large cells in the fourth layer are concerned in the representations of movement, and he could not understand why we should not allot to the small cells in the upper layer the representation of sensation. He had divided the motor regions into minute areas, and studied the effect of irritation of these separate areas. He had found that the representation for any part was not limited to one minute portion of the brain, but that there was a focal point where it was strongest, and then it gradually diminished as we passed outwards. In his different experiments he had met with certain points of difference. These were attributable to the employment of different species of monkeys. He now uses only the bonnet monkey, and for all practical surgical purposes the results are perfectly applicable to man.

Experiments performed during the past summer had enabled him to prove that the convulsions of so-called Jacksonian epilepsy were solely due to the cortex, and not at all dependent upon the spinal cord or upon the bulbar spinal system.

In cerebral surgery we practice simply the ordinary rules of surgery. In cutting out the bone, a one inch trephine should be first used to determine the thickness of the skull. The surgical engine may then be used to cut almost through the portion of bone to be removed. The bone may then be removed with strong forceps. The dura mater should be first separated. If nothing is found, and the operation is an

exploratory one, the dura mater should be opened. If we propose to use faradism for the recognition of certain areas, it is important that the ordinary antiseptic solutions should not be applied to the brain, for they tend to prevent the response to the electric current.

Parenchymatous hæmorrhage may be prevented by the use of morphia. The ligature must be always applied, if possible. Never pack the wound. In regard to the recurrence of epilepsy in operations performed for the relief of this affection, he considered that the recurrence was due to incomplete operation. In those cases in which he had removed to his own satisfaction not only the lesion but the surrounding brain substance for at least one centimetre, there had been no return.

He agreed with the previous speaker that there was danger of doing too much in certain cases.

CEREBRAL LOCALIZATION IN REFERENCE TO APHASIA,

by Dr. M. Allen Starr, of New York.

It is evident from the statements just made that cerebral surgery has a great future, but is dependent on neurology for its guide. The burden of responsibility for future progress rests upon physicians, for diagnosis must precede operation. The great discoveries in cerebral localization, made in the past, have been reached by means of the collection and analysis of large numbers of cases of localized disease in man, rather than through physiological experiment. Future advance must be in the same line. Hence the importance, too much overlooked in this country, of recording carefully every case of cerebral disease. And to be properly recorded it must be carefully examined. This is especially necessary in the cases of disturbances of speech.

The history of aphasia presents three epochs: First, that of Broca, in which the fact was established that lesions of the third frontal convolution on the left hemisphere produced aphasia; secondly, that of Wernicke, in which a distinction between sensory and motor aphasia was drawn, and the former was shown in a few cases to be due to lesion of the first temporal convolution; thirdly, that of Charcot, in which the four mental elements of speech were carefully separated. Charcot says: "A word is a complexus; in it we can discover, in persons of education, four distinct elements: the auditory memory picture, by whose means we are able to grasp the sense of words heard, the visual memory picture, which enables us to comprehend the words written or printed; and also two motor elements, the motor memory of articulation, and the motor memory of writing, the first developed by the repetition of movements of the tongue and lips necessary to pronounce a word, the second by the practice of motions of the hand and fingers necessary for writing." Each of these memories being distinct can be lost. The result is disturbance of speech whose forms vary. The loss of visual memories produces verbal amnesia and word-blindness. The loss of auditory memories causes word deafness. The loss of motor memories of writing results in agraphia. The loss of motor memories of pronunciation produces motor aphasia. Individuals differ largely in the degree of cultivation of each of these memories, and hence suffer differently when affected by their loss; for example, the literary man presenting far more symptoms than a common laborer when his memories of things read are lost. Another fact of importance is the independence of speech and thought. Aphasics may retain their musical faculties, and may sing when they cannot talk. Thinking, though largely done by the aid of speech, is not dependent upon it. We have memory pictures of the shape, form, sound and odor of objects independent of their names, and unless these are intact in the brain the perception of the object does not produce recognition of its nature or use, and does not awaken the memory of its name. The condition termed apoaxia is found with aphasia in some cases, but not in all.

Turning from clinical distinctions to pathology, the localization of the various memories necessary to speech was discussed. Motor aphasia is produced by lesion in Broca's centre, or in the tract from that centre to the cranial nerve nuclei. If it is due to lesion in the latter it is temporary and accompanied by other local symptoms. The situation of the lesion producing motor agraphia is uncertain. Word-deafness is due to lesion in the first temporal convolution, and is associated with word-blindness when the lesion extends to the supra-marginal convolution and angular gyrus. All the cases of pure sensory aphasia in which the lesion was limited to these parts (forty-one in number) were collected, and a chart of the brain was shown to support the localization stated. The condition of apoaxia was shown to accompany lesions situated in or beneath the angular gyrus.

The integrity of the connecting tracts between the various memory-centres is also necessary to the act of speech. These can be tested. Thus repetition after another, copying, writing at dictation, and reading aloud are acts involving two separate areas and their connecting tract. Lesions of these tracts produce disturbances of speech, some of which Lichtheim has described. But cases have not yet been sufficiently well tested to warrant any conclusions. The necessity of careful examination of all cases to detect various defects was dwelt upon, and the speaker closed by indicating how readily accessible to surgical interference the speech areas of the brain are.

Dr. W. W. Keen, Philadelphia, compared the head cavity to the other cavities of the body. The brain may be considered to be made up of a number of viscera having separate and distinct functions, and each of which has its own physical signs and symptoms. While we should be careful not to do too much we should not err in the other direction. The timidity with which the surgeon formerly approached the abdominal cavity was remarkable; the boldness with which we now attack the lesions of this cavity is almost appalling and the success equally gratifying. This history will be repeated in the case of the brain.

Dr. Robert F. Weir, New York, had since 1883 operated in ten cases of brain surgery. Three times for tumor; three for abscess; twice for hæmorrhage into the cerebrum where there was no external injury to indicate its locality; once for epilepsy and once for cerebral pain. In the last case the tumor was so deep that there was nothing to indicate its presence after the brain was exposed. It was one and a half inches below the surface. The growth proved to be a sarcoma. The operation was done last November. The patient is still living but there are signs of a recurrence of the growth.

Bergmann says that operation should not be performed when the patient is in coma or where the

tumor is large. Dr. Keen has removed a tumor weighing over four ounces, with recovery, and Mr. Horsley has removed with success a tumor weighing four and a half ounces from a patient in a state of coma. Sometimes, although no tumor is found, the operation causes disappearance of the symptoms by relieving the pressure. This might be applicable in apoplectic hæmorrhage where the clot could not be removed.

I have gone over the brain to find what parts are accessible to surgical interference. We are able to strip up the longitudinal and lateral sinuses to a considerable extent. The dura mater may be separate for a considerable distance from the bone. He had been able to raise up the frontal lobe so as to see the anterior clinoid processes and he had been able to feel the foramen magnum.

Adjourned.

Thursday evening session was devoted to the Address of the President, DR. J. S. BILLINGS, on

MEDICAL MUSEUMS.[1]

AMERICAN SURGICAL ASSOCIATION.

ANNUAL meeting, held in the main hall, Grand Army Building, Washington, D. C., September 18, 19, 20, 1888.

TUESDAY, FIRST DAY. — MORNING SESSION.

The Association was called to order at 10 A. M., by the President, DR. D. HAYES AGNEW, of Philadelphia.

The first business was the delivery of

THE PRESIDENT'S ADDRESS.[1]

The next paper was that of DR. JOHN ASHHURST, JR., Professor of Clinical Surgery in the University of Pennsylvania:

A CONTRIBUTION TO THE STUDY OF EXCISIONS OF THE LARGER JOINTS,

of which the following is an abstract:

The remarks which follow are based upon the records of 120 cases in my own practice, in which excisions of the larger joints have been required, and will refer particularly to the operative method, the after-treatment, and the functional value and limitations of applicability of excision in the case of each articulation. These 120 cases embrace 4 of shoulder-joint, 19 of elbow-joint, 40 of hip-joint, 51 of knee-joint, and 6 of ankle-joint excision.

Shoulder-joint. — My four shoulder-joint excisions have all terminated successfully. They all occurred in adults — three times in young persons, and once in an old person. The only case of special interest was that of a young married woman, aged thirty, admitted to the hospital in a very prostrate condition, with acute necrosis of the left humerus and consequent pyarthrosis of the corresponding shoulder-joint. The upper half of the humerus was removed at the first operation, and twenty-four days afterwards the entire remaining portion of the bone, including the condyles, the only osseous tissue left being a thin shell of small extent, which adhered to the periosteal sheath on the inner surface. The patient recovered rapidly and acquired a surprising amount of use of the affected limb, and the increasing firmness showed that, at least, partial reproduction of bone was occurring. With the elbow supported, the patient could use her wrist and hand with considerable freedom.

In excising the shoulder-joint, or, more strictly speaking, the head of the humerus, for the glenoid cavity rarely requires more than superficial scraping or gouging, I have employed the method by a single longitudinal incision. I have endeavored to avoid wounding the tendon of the long head of the biceps, but when the parts are matted together by long-standing inflammation the tendon is difficult to recognize, and is often not seen until it has been severed.

In the after-treatment, I attach much importance to the use of the well-known cushion devised by Professor Stromeyer. It keeps the elbow out from the trunk, thus insuring the close application of the sawn humeral shaft to the glenoid cavity, and enables the patient to sit up or lie down at pleasure, without disturbing the dressings.

The functional utility of the limb after excision of the shoulder joint is, upon the whole, quite good. The operation, although seldom called for in civil practice, should be adopted without hesitation in suitable cases, such as those of suppurative arthritis, caries, and necrosis, in which the indication for the operation is found either in the pain or in the exhaustion from profuse purulent discharge. For plastic or rheumatoid arthritis, or for simple anchylosis, the operation is not to be recommended, for the mobility of the shoulder compensates measurably for the stiffness of the joint, and the gain which would be obtained by operation is not sufficient to justify the risk.

Elbow-joint. — Of the nineteen cases of excision of the elbow-joint, six have terminated fatally: two adults died within five days from traumatic gangrene following injuries so severe that amputation would have been the better operation; one died from delirium tremens, two from tubercular meningitis, and one, an old man, from exhaustion in the course of the fifth week.

In excising the elbow-joint I employ a longitudinal incision on the inner side of the articulation, taking care not to wound the ulnar nerve and to retain the attachment of the biceps. As a rule, all the articulating surfaces should be removed, and within reasonable limits; the more bone that is taken away, the better, since flail-like union is less to be dreaded than anchylosis.

For the after-treatment, I employ a somewhat obtuse-angled, internal splint (Physick's splint), well padded and protected by oiled silk. As bony union is to be avoided, it is not necessary to use a splint to render the part immovable. As soon as the external wound has become solid, the splint should be abandoned and the arm kept in a sling.

The functional result of a successful excision of the elbow is more nearly perfect than that of excision of any other articulation. Cases which justify this operation are those of destructive or gelatinous arthritis, caries, necrosis, compound dislocation, or fracture not so severe as to require amputation, and even simple anchylosis.

Hip-joint. — I have forty times resorted to excision of the hip-joint in thirty-seven patients. Twice have I excised, at intervals, both hip-joints in the same individual, and once have I had recourse to re-excision in a case in which recurrent caries and recontraction

[1] See page 274 of the Journal.

[1] See page 265 of the Journal.

followed some months after the patient left the hospital. This case terminated fatally from suppurative osteo-myelitis and septic peritonitis at the end of a fortnight. Both cases of double excision did well. Of the forty operations, twenty-eight have been followed by recovery, eleven by death, and one is still under treatment. Of the thirty-seven patients, twenty-five have recovered and eleven died. Should the patient now under observation die, the mortality rate will be, as regards operations, 30%; as regards individual patients, 32.4% — a better showing than the results given by most statistical writers.

The incision employed begins with a straight cut in the direction of the fibres of the gluteal muscle, curves around and behind the trochanter, and terminates again in a straight cut corresponding to the axes of the femur. While affording free exposure to the joint, it necessitates but little transverse division of muscular fibres. The head of the bone may be made to protrude and removed with the chain-saw, or, under other circumstances, divided by a small saw *in situ*. It is my custom to remove both trochanters and round off the sawn end of the femur.

In the after-treatment I keep the limb well adducted with simple weight extension, with lateral support by sand-bags. As soon as the external wound has become solid and the patient can control the motions of the limb, he may be allowed to get about on crutches.

The functional result of hip joint excision must be somewhat differently judged from that of excision in the case of other articulations. In most instances the operation is performed only when death seems threatened by profuse suppuration or its consequences, and if the patient is relieved of pain and restored to a fair state of health and comfort the treatment is amply justified. At the Children's Hospital in Philadelphia, where twenty of the forty operations were performed, the rule is not to operate except in otherwise hopeless cases, and hence our recoveries represent so many lives saved, but in many cases excision not only saves life, but restores the patient to the active duties of existence. In thirteen of the twenty-eight cases the patient obtained a useful limb, and in two of these the utility is qualified as perfect. The condition which most often calls for this operation is "hip disease." I consider the operation suitable in certain cases of gunshot injury. For uncomplicated anchylosis it is not to be recommended, simple osteotomy being here a safer and surer method. Where anchylosis co-exists with extensive caries or necrosis, excision may properly be resorted to. I am afraid that the "age limit" for hip-joint excision must still be maintained. In the case of the knee, I have ventured to extend the benefits of this conservative procedure to adults and even to middle-aged persons, and with great success. But excision of the hip-joint becomes an operation of great and rapidly-increasing gravity when once puberty is passed. Thus, while I count twenty-five successes and only four deaths in persons under fifteen years of age, I have had only three recoveries and no less than seven deaths in those older. In adults the operation should only be undertaken with a clear understanding of the very great risks by which, under these circumstances, it is attended.

Knee-joint.—I have performed fifty-one excisions in fifty patients, once having employed re-excision for anchylosis with recurrent deformity in a case in which I had excised the joint nine years before. Once I amputated the thigh, ten weeks after excision on account of beginning failure of health, and a good recovery followed. Of the fifty-one cases but five have ended fatally, a death-rate of less than ten per cent.

In excising the knee-joint I have uniformly adopted the single transverse incision, and have invariably removed the patella. The bone sections are commonly made with a butcher's or bone saw. I take particular care to remove all of the diseased synovial membrane, as well as all patches of carious bone. In treating the large bursa beneath the quadriceps muscle I have endeavored to hasten the cure by making a long incision on the outer side of the limb, and either dissecting the bursa out bodily, or else scraping away its lining membrane with a sharp curette. If foci of softened and carious bone are found beyond the points at which it is safe to use the saw, I remove them with the gouge, and, if necessary, cut a channel through the osseous wall in such a way that the part may heal firmly without leaving a sinus.

In the after-treatment I employ a bracketed wire splint, which, while firmly fixing both thigh and leg, enables the limb to be dressed as often as is needful without causing the patient pain. I have left the limb on the splint as long as six or seven weeks. After bony union is well advanced and the external wound is almost healed, I substitute a simple posterior splint or gutter of pasteboard. I think it important to use means of mechanical support for at least six months, particularly with children.

The utility of the limb after successful excision of the knee is very great. The limb is stiff and slightly shortened, the foot is sometimes a little inverted, but the limb is strong, painless and enduring, and enables the patient to lead an active, useful life. As a substitute for amputation, and it is as such that I employ it, the merits of knee-joint excision cannot be gainsaid.

The cases in which excision of the knee-joint is indicated are chiefly those of arthritis, particularly of the variety for which years ago I suggested the name of gelatinous, of caries, of neglected epiphysitis, etc. The operation may properly be performed in anchylosis with deformity, and also in certain instances of wound of the articulation where the extent of the injury is limited. In most traumatic cases, however, I believe that when any operation is called for amputation will be found preferable.

Ankle-joint.—I have resorted to this operation six times, although about as often I have removed the astragalus without interference with the tibia and fibula. Two of the six cases proved fatal from phthisis, one four months and the other nine months after operation. My impression is that this operation in itself is attended with very little risk.

In excising the ankle-joint, I make an external incision curving around behind and below the outer malleolus, and carried forward as far as can be done without endangering the extensor tendons, and prolonged upward as far as needful in the line of the fibula. A second smaller incision is made longitudinally over the lower end of the tibia. It is usually desirable to remove the whole astragalus. This is perhaps the most tedious and difficult of all excisions, and the operation may be facilitated by rendering the part bloodless by the use of the Esmarch apparatus. The ankle-joint is the only joint, with the exception of the wrist, in the excision of which the use of this apparatus seems to me to be desirable.

Some years ago I devised a bracketed splint for the after-treatment of ankle-joint excisions. This answers a good purpose. If antiseptic dressings are used, however, the part usually requires so little disturbance, that a simple posterior gutter of pasteboard, supplemented by a fracture box, will be sufficient. The foot should be kept at right angles with the leg.

The cases which seem to me to call for ankle-joint excision are those of compound fracture and dislocation, less severe than to require amputation, and those of localized caries and arthritis in which there is no suspicion of general tuberculous infection.

The large majority of my excisions have been performed without any of the so-called "antiseptic precautions," and the wounds have been dressed with simple oiled lint, or with lint saturated with dilute alcohol. For more than a year past, however, I have employed the antiseptic method in almost all my large operations, using also antiseptic dressings in their after-treatment, and I think with benefit, though I am obliged to say that, as regards the ultimate welfare of the patients, I have not noticed any gain. My best series of consecutive successes have been obtained under old methods, and I have not obtained any diminution of mortality by the adoption of the new. At the same time I have seen no ill results which could be attributed to the use of antiseptic measures. Their use shortens the period of convalescence, and they have the merit on account of the infrequent change of dressings needed that they greatly lessen the surgeon's labor. I know of no cases which require more personal and unremitting attention than those of excision, and it is an unquestionable advantage to be obliged to dress a wound only once a week, or every other week, instead of daily or every other day.

What will be the future of the operation of articular excision? The brightest triumph of conservative surgery in the hands of Fergusson and his successors, will it keep its place? or as some of our more enthusiastic brothers prophesy, will improved methods of dealing with joint disease in its early stages, make excision a matter only of surgical history and of antiquarian investigation? It seems to me that as the introduction of excision did not enable surgeons to abandon amputation for articular lesions, so, improve treatment as we may, and educate the public as we may as to the necessity of being treated early, there will always remain a class of cases in which only by sacrificing a part can we hope to save the whole, and in which excisions of the larger joints will, therefore, still be resorted to by judicious and conservative practitioners.

DISCUSSION.

DR. LEWIS A. SAYRE, of New York: The paper of Dr. Ashhurst has so thoroughly covered the ground that very little is left to discuss. In excision of the hip-joint, I have been in the habit of using the wire cuirass, for the reason that it permits the carrying of the patient into the open air — an object not readily attained when the patient is kept in bed with the ordinary apparatus.

In regard to the antiseptic treatment, which I practice entirely, I think that I may claim that I have used it, without knowing it, from the time that I commenced practice of surgery. I think that my success has been largely due to the practice of pouring into the wound Peruvian balsam, which, from the creosote it contains, is an excellent antiseptic. I have, also, always arranged for thorough drainage. When I practised my first excision in 1854, the operation was universally condemned. Some seem to now be going to the other extreme, and performing excision of the hip-joint too early, before a thorough trial of local and general treatment has been employed.

DR. R. A. KINLOCH, of Charleston: There is now no disagreement so far as to the general question of excision is concerned, but there are still some important questions to be considered. In the first place, the distinction of traumatic from pathological cases amenable to operative procedure, and, in the next place, as regards the joints, which are apt to do best in connection with excision for traumatism and for pathological processes. A consideration of the age and surroundings of the patients is of importance. Probably the best results follow excision in connection with shoulder-joint excision for traumatism. In connection with gelatinous inflammation of the elbow-joint, I have had satisfactory results, even where all the material could not be removed. I feel sure that if a few of the principles of so-called antiseptic treatment — cleanliness, thorough drainage, and absolute rest — are adopted, many of the details may be omitted.

DR. T. F. PREWITT, of St. Louis, insisted on the necessity of getting cases of excision in broken-down children out-of-doors as soon as possible.

DR. F. S. DENNIS, of New York, called attention to cases of excision of knee-joint for disease beginning in abscess of the condyle. In these cases the abscess-cavity breaks down after recovery, leading to the production of deformity. In these cases he takes away all of the abscess-cavity, saws away a corresponding piece from the tibia, and brings the oblique surfaces together.

He has been in the habit of employing antiseptic dressings, removing the drainage-tube on the third day, allowing the first dressing to remain for five or six weeks.

In excision for injury, only enough bone to allow of free drainage should be removed.

SIR WILLIAM MACCORMAC, of London, said he had heard with some surprise that the tendency seemed to be to postpone excision of the hip-joint until all other measures had failed. This is not the routine practice in regard to any other joint. In England, the disposition is to perform the operation at an earlier period. Another point that he had not heard mentioned in the paper was in reference to the performance of operation in cases of old dislocation of the joint. He had performed this operation with success in old hip-joint dislocations, and reported the case of a sailor coming under observation three years after the occurrence of dislocation of hip-joint, which had not been reduced. After the operation he could use the limb perfectly. He had been much interested in the recommendation of Dr. Ashhurst, that a long incision be made to reach the subcrural bursa, a suggestion which he had not heard mentioned by any other surgeon.

DR. E. M. MOORE, of Rochester, expressed surprise to find a certain amount of indifference manifested towards the use of antiseptic surgery. He had found, in his practice, the greatest improvement follow the use of antiseptic dressing in these cases of excision.

DR. JOHN E. OWENS, of Chicago: He agreed as to the value of the wire cuirass, and referred to a modification of this apparatus, consisting in the substitution of a frame of gas-pipe conforming to the outline of the

body. On this the body is supported by means of flannel stretched between the two sides of the frame. Extension may be applied, if desired, by the use of adhesive plaster, counter-extension being provided for by elevating the foot of the frame. After keeping the patients in bed for thirty days, he tries to get them into the open air. He had found great advantage in keeping up a certain amount of extension after the patient was allowed to get up. By removing pain, this enables the patient to move the joint more freely, and thus tends to favor greater mobility of the part. He thought that there was no comparison between the antiseptic methods and those formerly employed.

DR. FRED. LANGE, of New York, referred to a class of cases in which the disease of the hip began in the tissue outside of the joint, the articulation becoming involved at a later stage of the affection. In these cases he recommended early operation, with the hope that in this way necessity for opening the joint would be avoided.

AFTERNOON SESSION.

The Association was called to order, at 2 P. M., by PRESIDENT AGNEW. The first paper was entitled

THE RELATION OF MICRO-ORGANISMS TO INJURIES AND SURGICAL DISEASES,

by DR. NICHOLAS SENN, of Milwaukee.

The paper was so extensive, that in the limited time allotted to its consideration the author was able to refer to but few of the points which it contained. At the present time, no argument is required to show that many special conditions are due to the presence of bacteria. In regard to the so-called hereditary transmission of disease, the author held that the specific microbes of the specific diseases are transmitted directly from parent to child. In evidence of this, he referred to cases of so-called hereditary osteo-myelitis in newly-born infants. In other cases, while this same origin may be inferred, we have as yet no direct evidence that such is the case. In regard to the question whether or not pathogenic micro-organisms exist in the healthy body, while the results of some observers point in this direction, the results of others are opposed to the existence of pathogenic organisms in the healthy body. The conclusion was that, under certain circumstances, pathogenic organisms might be present. There is proof of this in cases in which, after accidental injury, there is localization of these pathogenic organisms. Acute, suppurative, infectious osteo-myelitis following slight injury or exposure was cited as an illustration of this fact. This localization is favored by certain anatomical conditions. The antagonism among micro-organisms was being considered when the time of the author expired.

DISCUSSION.

DR. ROSWELL PARK, of Buffalo, had done some work in this direction. He had examined pus from fifty-two sources, and presented a table showing the number of cases in which pyogenic bacteria were found.

He had also prepared culture media with various antiseptics in different proportions, including carbolic acid, iodoform, iodine, naphthaline, hydro-naphthol, resorcin, trichlorphenol, creoline, sulpho-carbolate of soda, boric acid, perchloride of iron, antipyrine, antifebrin, and quinine. Almost the only one of these antiseptic jellies, as thus prepared, which has prevented all growths was hydro-naphthol, 1:100. This shows that hydro-naphthol can be relied upon as antiseptic. Many of the bacteria grow freely on iodoform jelly 1:100. Those which grew abundantly on iodoform jelly grow slightly on oxide-of-zinc jelly 1:100. Oxide of zinc was considered a better solid antiseptic than iodoform. The author thought that our present knowledge permitted us to associate certain bacterial forms with definite pathological lesions. In conclusion, he presented the report of a case of abscess of the face, in which he found the micrococcus tetragens. So far as he knew, this micro-organism had never before been found in phlegmon in man.

DR. WM. H. CARMALT, New Haven, remarked that there was only one point to which he wished to refer, that was reference to the alleged microbic origin of tumors. A great deal has been said in regard to the microbic origin of cancers and other tumors. He thought that the division of Virchow's class of granulomas into a class of tumors by themselves, known as infectious tumors, is correct. This class includes tubercle, syphilomes, lepra, lupus actinomycosis and myelitis. These growths should be taken out of the class of tumors and assigned to a class by themselves. He had been unable to convince himself that tumors proper have a bacteriological origin.

DR. N. SENN in concluding the discussion, said that the diseases enumerated in his paper, included only those in which the specific cause had been isolated, cultivated outside of the human body, and in which the injection of this culture produced identical lesions. When these three things are done we have furnished positive proof that the disease is due to specific germs. Another class of diseases had been alluded to in the paper in which there was reason to believe from analogy that the affection was due to specific germs although the three conditions above referred to had not as yet been fulfilled. So far no one had been able to show that the supposed bacillus of syphilis was the specific bacillus. That it is a specific disease cannot be doubted; that it is due to a microbe cannot be doubted, but to establish this positively, experimenters must do what Koch did before he announced the specific origin of tuberculosis.

He was firmly convinced from his observations that tumors in the true sense of the word were not due to microbes. He had made tumor implantations for many years in animals, and in justifiable cases in man, both close to the original seat of disease and at remote points, without obtaining the least evidence of the *microbic origin* of disease.

DR. W. W. KEEN, of Philadelphia, then read a paper entitled

THREE SUCCESSFUL CASES OF CEREBRAL SURGERY;

including (1) the removal of a large intracranial fibroma; (2) exsection of damaged brain tissue; and (3) exsection of the cerebral centre for the left hand; with remarks on the general technique of such operations.

CASE I. Large tumor in the cerebrum probably arising from an injury at three years of age; epilepsy and hemiplegia at twenty-three; tumor removed at twenty-seven. Hernia cerebri; recovery. Sent to me in May, 1887, by Dr. M. L. Davis, of Lancaster, Pa.

The young man, aged twenty-seven, at three years of age, fell several feet striking his head on some bricks. At five, following the measles, he had a discharge from the right ear which has continued at

times ever since, and has impaired his hearing. His mental development during childhood was probably somewhat imperfect. In February, 1885, epilepsy with intense pain in the head supervened. About April right-sided hemiplegia was complete with aphasia; the right pupil was largely dilated and irresponsive to light; vision imperfect.

Dr. Davis made a diagnosis of pressure on the anterior lobe of the left hemisphere from exostosis, tumor, or possibly only a thickening of the dura mater; syphilis excluded.

After treatment with iodide of potassium and arsenic, he improved so far that by the summer of 1885, he had recovered from everything except the epilepsy and the aphasia. Both eyes became blind during this summer, but they improved to such a degree that he could write a letter. Urine was normal.

May 30, 1887. When first examined by Dr. Keen, the only remnant of his former state was epilepsy, hesitation of speech and headache, with the utmost cerebral discomfort. In the attacks the eyes, head and neck turned toward the right, while his body was twisted to the left; right pupil larger than the left; convulsions general. With the right ear the watch was heard at four inches, and the membrane was partly destroyed; left side, watch not heard on contact, membrane thickened. Dr. Oliver found only right-sided fields of vision, arrow-head shaped, with only perception of form, and paresis of the right interni and left superior and inferior recti and post neuritic atrophy.

A small scar was finally settled upon as that resulting from the accident, a half inch above and in front of the left superior stephanion, two and one-quarter inches to the left of the middle line, and three inches behind the external angular process. The temperature on this side was one degree (C.) higher than on the right. Dynamometer recorded 30° for the right hand, and 35° for the left. Knee-jerk, left, normal; right subnormal.

Diagnosis was a probable tumor at the base of the frontal convolution, involving the centres for the leg, arm, face and speech. The operation was done December 15, 1887. The following was the method of preparation for this and all the other operations.

The room was uncarpeted and contained only necessary furniture. The walls and ceiling were carefully wiped the day before, and all the wood-work and furniture as well as the floor were thoroughly scrubbed with carbolic solution. New, clean, disinfected sponges with sublimate solution were used, the proportion being 1 to 1000. In the first operation all the instruments were boiled for two hours, but in the second and third they were placed in a solution of carbolic acid, 1 to 20, for half an hour, then were transferred to boiled water which had cooled sufficiently to permit of their being handled. No spray was used at the second and third operations, but at the first it was used in the room during the morning of the operation.

The day before the operation the patient's head was shaved, then scrubbed with soap and water, then with ether and covered with a wet sublimate dressing, 1 to 1000, which was retained in its place until the operation, when the ether and sublimate washings were repeated. The hands and finger-nails were carefully cleaned and disinfected with soap and water, then with pure alcohol and sublimate solution.

A nick was first made in the bone at the site of the scar, by means of which later the situation of the tumor was accurately determined. This was done by fitting the disk of bone to the surface of the tumor, making measurements to the edges of the tumor from the nick and transferring these to another skull. An inch and a half trephine was then applied and the opening thus made disclosed at once the tumor. The opening was finally enlarged until it measured three inches antero-posteriorly by two and one-half transversely.

The tumor was now readily enucleated by the finger. Its weight was three ounces, forty-nine grains. It displaced two and one-half ounces of water. Its size was two and seven-eighths by two and one-half by one and three-quarters inches. The circumferences were seven and one-eighth and six inches. It extended from just above the fissure of Sylvius to within three-quarters of an inch of the middle line, and from near the fissure of Rolando forward into the bases of the three frontal convolutions. In a normal brain it would have reached to the lateral ventricle and the upper and outer half of the corpus striatum. Microscopic section showed it to be fibroma.

Hæmorrhage was quite abundant and was checked with difficulty, Kocher catgut being applied to most of the vessels. Hot water (115 to 120°) and direct pressure by sponges finally arrested it. Rubber and horsehair drainage and antiseptic dressings were used, and most careful antisepsis during the operation and subsequent dressing.

For a week he did very well, his temperature only reaching 100° F. A considerable clot disintegrated and was discharged by the drainage tubes. His mental condition was clear; no anæsthesia.

By the eighth day all but two of the sutures were out. His temperature, however, rose rapidly to 104.2°, with aphasia, hemiplegia and constipation, which was followed by diarrhœa with fetid stools. Fearing an accumulation of pus the wound was reopened to about half its extent disclosing a mass of tissue discolored and moderately vascular, resembling white brain tissue, but no pus existed.

In the next four weeks he had several attacks of fever, which were apparently caused by constipation, and by renewed discharge from the right ear. With each of these attacks of fever his aphasia and hemiplegia, which bettered with the fall of temperature, immediately increased. By the end of the fifth week, however, he had good movement of the right leg, and had nearly recovered the movement of the right arm. Finger flexion was slight; finger extension could be executed, but could not be repeated.

Reopening of the wound was followed by considerable hernia cerebri, for which, however, nothing was done save dressing it, at first daily, then at longer intervals, with corrosive sublimate dressing. The daily dressing at first was necessitated by a very abundant watery discharge oozing from two pin points, undoubtedly the cerebro-spinal fluid escaping from the lateral ventricle.

As the hernia showed no tendency to cicatrize, thirty-four skin grafts were successively applied. At the end of ten weeks cicatrization was complete, when immediately the state of the hernia changed from an elevation to a deep hollow. Nails on the right hand as shown by NO_3 had only grown half as rapidly as those on the left. The temperature on the left side

was now 1.3° C. below that on the right. The dynamometer recorded 23° for the right side, and 30° for the left.

The tumor which proved to have originated from an injury at three years of age, and which, therefore, had been growing for twenty-four years, up to the time of its removal, gave no material signs for twenty years, when suddenly it caused epilepsy, hemiplegia and other phenomena as stated. The region involved in the normal brain can hardly be deemed an exact representation of the location actually involved, for undoubtedly the brain accommodated itself to the enlarging tumor, as they "grew up" together and the cortical centres, and, possibly, the great basal ganglia were displaced into regions that can only be guessed at.

The tumor histologically is very rare, only three fibromata appearing in the five hundred and eight intracranial tumors tabulated by Bernhardt and Hale White.

CASE II. Was a simple depressed fracture of the skull followed in four months by epilepsy; thirteen months later trephinement and removal of damaged brain tissue; recovery in seven days; cure of epilepsy to date.

Dr. Keen pointed out that this patient should have been trephined immediately after the accident. Both the patients were present before the Association and examined with care. In the first case there have been several fits during the summer. In the second case there has been one very slight one since the operation, the result apparently of great disturbance from a death in the family.

The third case, involving removal of the centre for the left hand and wrist, followed by recovery, as well as a fuller history of two cases here briefly reported, may be found in the *American Journal of the Medical Sciences*, for October and November, 1888.

WEDNESDAY, SEPTEMBER 19TH. — SECOND DAY.— MORNING SESSION.

THE FORMATION OF AN ARTIFICIAL URETHRA FOR PROSTATIC OBSTRUCTION,

by DR. HUNTER MCGUIRE, Richmond.

It has been my lot to meet with a number of cases of hypertrophy of the prostate gland, which produce more or less obstruction to the passage of urine. These are conveniently divided into three classes.

(1) Cases where the obstruction was due to temporary congestion of an already enlarged gland which yielded to the ordinary treatment and did not return.

(2) A class of cases where the obstruction to the passage of urine was permanent but not great. Attention to the general health, the occasional introduction of the catheter and washing out the bladder were all that the cases required. These cases are, however, never free from danger from exposure, etc., and gradual enlargement may go on and bring about the condition met with in the third class.

(3) In these cases the obstruction is great and fixed, micturition is frequent and difficult, perhaps impossible without the aid of the catheter. The introduction of the instrument grows more and more difficult; offensive residual urine is always present, and the general health suffers greatly. Cystitis, localized or general, is a painful and pronounced symptom. Violent tenesmus of the bladder, provoked by the obstruction, injures the vesical ends of the ureters, possibly a reflex of stale urine is driven into these canals and ureteritis follows, then pyelitis and pyelonephrosis, from which the patient dies.

The paper was devoted to a consideration of surgical interference in this third class of cases. He was led to resort to the measures described from the following circumstances: During the past eight months four cases of stone in the male required the suprapubic operation. Two because of organic stricture; one because of the large size and hardness of the two calculi the bladder contained; the fourth because the stone was large and hard and the patient too anæmic to bear the shock and loss of blood which often accompanies section through the rectum.

In one of the cases of stricture, in a man sixty-five years of age, the patient had, two years before coming under observation, a second cause of obstruction. A well-organized stricture was found in membranous portion of urethra. Prostate was enlarged, more marked on the left side. Urine showed no evidence of renal disease. An oxalate calculus three-quarters of an inch in diameter was also recognized. The high operation for stone was performed. The bladder walls were found thick and unyielding, and contracted. The left side of the gland jutted into the bladder one and one-half inches further than the right side. The middle lobe was of the size of the thumb and almost completely closed the urethra. It was divided to retain a fistulous opening through which urination could take place. This tract was two and a half inches long and extended upward and forward. In its passive state it was closed by the pressure of the parts through which it passed. When the bladder became full and contracted, the urine was forced through the fistulous tract. He can now retain water for two or three hours, and has voluntary power both to retain and expel urine.

CASE II. Was a man sixty-nine years of age, who had been cut for stone in 1881. In 1883, I found the prostate enlarged and cystitis present. He was given a gum catheter and shown how to use it. In 1886, electrolysis was employed without success in trying to reduce the size of the prostate. July 4, 1888, an operation similar to that performed in the first case was done with equally good results. At times he is able to retain urine six hours. He never has any desire to empty the bladder, no matter how full the organ is.

Mode of Operation. The night before the operation the bowels are opened. On the day of operation fifteen to twenty grains of quinine are administered. Antiseptic precautions are adopted throughout. The bladder is washed out with a weak solution of carbolic acid in hot water. An empty gum-bag capable of holding twelve ounces is passed into the rectum. About twelve ounces of water are then introduced into it. This pushes the bladder above the pubes. The bladder is next filled with a hot solution of carbolic acid. The use of force should be avoided. The penis is tied with a piece of rubber tube to prevent escape of the fluid. A vertical incision is next made beginning three or four inches above the pubes and extending to the symphysis. This extends to the linea alba. The incision in the latter structure should be from three-fourths to one inch shorter than that through the skin. When the transversalis fascia is reached, it should be divided but not for more than two inches, but should reach to the pubic bone. The fat and cellular tissue between the transversalis fascia

and bladder, is separated with the handle of the knife. This tissue should be disturbed no more than necessary. The bladder is now drawn forward with a tenaculum and opened as low down as possible. The interior of the organ should be carefully explored with the finger. Sutures should now be applied extending down to, but not including the recti muscles. The opening left in the skin should be at the upper extremity of the wound, so that the fistula will be oblique and from two and one-half to three and one-half inches in length. A catheter is passed through this opening. If the catheter causes annoyance it may be at once removed, otherwise it is better to allow it to remain a few hours. The dressing consists of a pledget of absorbent cotton changed as often as necessary. In none of my operations have I met with the peritoneum.

In the after-treatment it is important to keep the urine acid, for acid urine is aseptic. In operating on these cases and in the high operation for stone, the amount of blood lost has not exceeded two drachms.

SUPRA-PUBIC CYSTOTOMY,

by DR. JOHN H. PACKARD, Philadelphia.

The present paper was supplementary to one on the same subject read by Dr. Packard at the last meeting, and was intended to correct an accidental omission of the views of Dr. Henry Thompson. These were now considered extensive quotations from the works of this author being given. Two cases were reported, in one of which the operation was performed for the removal of a portion of silver catheter broken off in the bladder; and in the other for the removal of a piece of rubber catheter said to have been broken off several months previously. In this case a stone weighing 571 grains was removed, in the interior of which was found the *foreign body*.

DISCUSSION.

DR. S. W. GROSS, Philadelphia, thought that Dr. McGuire was to be congratulated on having introduced a new operation based upon the mechanism of the bladder and the physiology of micturition; the formation of a artificial urethra in a new position. The various operations which had been performed for the relieve of prostatic obstruction were next referred to, the operations of Harrison, Mercier, Bartinini and McGill, were considered.

DR. WM. T. BRIGGS, of Nashville, thought that perhaps in the cases reported by Dr. McGuire, a better result might have been obtained by lateral lithotomy provided the stone were not too large to be removed by that route, for he had noted that after incision into the prostate the gland diminished in size and after the wound had healed a catheter could be passed in cases in which its use was before impossible. The perineal operation allows of freer drainage. Under some circumstances the supra-pubic operation is a valuable one. This is especially the case where the stone is so large that its removal through the perineum is liable to produce serious injury to the soft parts. It is, however, often possible through an incision in the perineum to so break the stone as to permit its removal. Every case should be studied by itself; in some, one operation is the best, in others, another is most suitable. All the circumstances of the case must be taken into consideration.

MR. REGINALD HARRISON, Liverpool, said that there are two general methods of relieving obstruction due to enlarged prostate, one by attacking the gland through the bladder, and the other through the perineum. In his operation he makes a median or lateral incision through the perineum according to circumstances. The obstructing prostate is next divided with considerable freedom and a drainage-tube of considerable size introduced; from this operation he gets good results. Perineal lithotomy is preferable to the supra-pubic operation because the lateral incision gives sufficient room for all manipulations. It gives an ample opening for the removal of a stone of considerable dimensions. It also permits of the more or less permanent drainage which these cases require. He had also through a perineal opening used the perineal lithotrite with success. All methods of operation should be remembered and each employed in those cases where it seems indicated.

PROF. THOMAS ANNANDALE, Edinburgh, had come to the conclusion that if an operation is to be performed for the relief of prostatic obstruction, the perineal operation is the best. This allows of examination of the bladder, permits drainage and probably causes a diminution of the hypertrophy. It enables you to occasionally remove a portion of the enlarged prostate when this assumes a pedunculated form. The speaker exhibited a rubber tube which he had found useful in cases of Harrison's operation, where a permanent tube is required.

DR. A. VANDER VEER, Albany, said that the testimony presented in his paper last year was in favor of the perineal opening so far as drainage was concerned. He had employed Harrison's operation in a number of cases and the results had been such as to impress him favorably.

MR. ARTHUR DURHAM, of London, emphatically endorsed what had been said in regard to operation of stone; that no one operation is applicable to all cases. It is a great mistake to be men of one method, especially in surgery. When we hear a man say that he treats all his cases of fracture in such a way, all his cases of stone in such a way, and all his cases of prostatic disease in such a way, we may be sure that such a man has a very small practice and experience, or else is a very great fool. In cases in which stone in the bladder is complicated with enlarged prostate, the perineal incision seems to him to be better than the supra-pubic. He described a method of performing perineal lithotomy which is performed with satisfaction at Guy's Hospital. This consists in the use of a straight staff, the groove extending to within one-third of an inch of its extremity. A knife with a straight back is passed through the perineum until it reaches the groove, then carried along the groove to its extremity and the point of the knife being held in close contact with the staff, the two are carried forward into the bladder, thus avoiding many of the risks of the operation as ordinarily performed. In concluding, he referred to the great improvement of the Bigelow operation over the old method of crushing for stone. He had no doubt that this method rendered both lateral and supra-pubic lithotomy much more rare than they have been in the past.

PROFESSOR HINGSTON, of Montreal, believed that the supra-pubic operation was one to be performed only in exceptional cases. These he classified as follows: (1) In those cases of stricture in which the obstruction cannot be overcome in time to relieve the patient of great suffering. (2) In cases of prostatic

obstruction. (3) In cases of tumors of the bladder which would interfere with the lateral operation. (4) In cases where the stone is too hard or too large to be removed either by lithotrity or by lateral lithotomy. He had himself removed without injury to the soft parts, a stone weighing five ounces and five drachms.

Sir Wm. MacCormac, London, had performed the operation of supra-cystotomy occasionally. He had never seen any untoward consequences and the operation seems to be devoid of all risks. He did not consider that drainage was necessary after this operation. The bladder empties itself freely and the drainage-tube is a source of irritation.

Dr. Hunter McGuire, said that the only object of his paper was to describe the two cases in which he had made an artificial urethra to relieve prostatic obstruction. The various operations referred to were not applicable to all cases while the formation of an artificial urethra could be done in all cases. He was surprised to hear that supra-pubic cystotomy was considered dangerous. It had the advantage of avoiding some of the unpleasant consequences of the lateral operation such as dribbling of urine and impotence.

Dr. J. H. Packard, did not want to be considered as an advocate of supra-pubic cystotomy. It had, however, been shown that the dangers attributed to this operation, did not exist. He considered that the operation was a valuable resource in certain cases. After this operation he had noted diminution in the size of the enlarged prostate. This he attributed to the rest afforded the bladder. It will take place in whatever way the rest may be obtained.

The President, Dr. D. Hayes Agnew, being called upon, said the ground had been so thoroughly covered that there was little to be added. He agreed with those who held that no single operation was applicable to all cases. The supra-pubic operation may be appropriate in certain cases, while in others the perineal operation is the proper one. In order to avoid the unpleasant consequences which occasionally follow the perineal operation in children where the prostate is small, I avoid the introduction of the finger into the bladder and remove the stone with forceps not much larger than the staff.

While there may be no danger in the supra-pubic operation in skilled hands, yet with the inexperienced operator there will be risk of opening the peritoneal cavity. He thought that a number of cases had been reported of rupture of the bladder following injection of the organ after dilatation of the rectum with the rubber bag.

A paper entitled

FORTY YEARS OF CHLOROFORM AND ETHER IN LOUISVILLE, KY.,

by Dr. D. W. Yandell, of Louisville, was read by title.

The following are the officers of the Association for the ensuing year:

President, Dr. D. W. Cheever, of Boston. *Vice-Presidents*, Dr. T. W. Richardson, of New Orleans, and Dr. John B. Roberts, of Philadelphia. *Secretary*, Dr. J. R. Weist, of Richmond, Ind. *Treasurer*, Dr. P. S. Conner, of Cincinnati. *Recorder*, Dr. J. Ewing Mears, of Philadelphia. Additional members of *Council*, Dr. W. F. Peck, of Davenport, and Dr. S. W. Gross, of Philadelphia.

The next meeting to be held beginning the second Tuesday of May, 1889, in Washington. Chairman of Committee on Arrangements, Dr. J. S. Billings. Member of Committee of Arrangements, Dr. J. Ford Thompson, of Washington.

WEDNESDAY.—AFTERNOON SESSION.

THE SURGICAL MANAGEMENT OF TYPHLITIS AND PERITYPHLITIS,

by Dr. W. T. Bull, New York.

The author reported seventeen cases operated on by himself. These he divided into three groups. The first, including ten cases in which abscess was opened by incision without opening the general peritoneal cavity, at periods ranging from seven days up to six weeks from the beginning of the attack. All of these cases recovered. The second group included six cases in which laparotomy was performed seven times for supposed perforation (one patient being operated on twice). The earliest operation was at the expiration of thirty-six hours, the latest on the fifth day. Death occurred in two of these cases, one from incomplete operation, and the other from imperfect technique. The third group contained but one case, but the author hoped that in the future more would be reported. In this case laparotomy was performed in the presence of threatening symptoms on the twelfth day of an attack of perityphlitis. No pus was found, and no signs of recent peritonitis. The appendix was surrounded by old adhesions. The diagnosis of this class of affections was then referred to.

The operations described were laparotomy and simple incision of the abscess. Antiseptic precautions should be adopted in both. The incision for laparotomy should begin a finger-breadth above the right of Poupart's ligament, and extend upwards four inches. The peritoneum should be divided at the lower angle of the wound. Adhesions are then separated and any pus found evacuated. The intestines should not be allowed to escape through the wound. The region behind the cæcum must be carefully examined. If there is perforation or gangrene of the appendix it should be removed at its junction with the cæcum. After thorough washing out of the cavity, a drainage-tube should be introduced, passing to the bottom of the iliac fossa.

For opening an abscess, the incision should start from the point before mentioned, and continue either parallel with the ligament or more vertical, according to the position of the abscess. Incision may be required above and parallel with the crest of the ilium if the maximum of tumefaction is found there.

A brief report of the cases operated upon was then given, and the following conclusions presented.

Our recent knowledge justifies the statement that both the cæcum and appendix may be the starting-point of an inflammation spreading to the peritoneum or to the peritoneum and cellular tissue of the iliac fossa, constituting a complicated lesion which, for convenience sake, we may call "perityphlitis."

This may be in its clinical course resolving or suppurative, each marked by definite symptoms in some cases, in others difficult to recognize.

Needle exploration is a justifiable and desirable method of diagnosis, though attended by some risks. These may be reduced to a minimum if care be taken to reserve the practice for cases where the symptoms have lasted several days, and where a distinct indication "tumor" can be made out.

Suppurative perityphlitis may be a spreading or limited (circumscribed) perityphlitis. Both begin with the same set of symptoms, and it is important to discriminate between them in the first twenty-four or forty-eight hours, or even on the third day.

The presence of any of the local or constitutional signs of general peritonitis justifies the diagnosis of a spreading or generalization, and calls for the performance of laparotomy and the repair of the lesions found.

The absence of these signs or their strict localization warrants delay of a varying length. Any time after a week the abscess may be opened by an incision which must reach the pus whether it be extra- or intraperitoneal.

In doubtful cases the risk of the operation is less than the risk of the disease.

The propriety of exploring and removing the appendix in recurring cases must still remain *sub judice*.

THE PROPRIETY OF SURGICAL INTERFERENCE IN PERFORATING TYPHOID ULCER,

by Dr. J. EWING MEARS, Philadelphia.

The present state of our knowledge and our largely accumulated experience have enabled us to define with a degree of exactness the limits of surgical interference in certain affections of the abdominal organs. The researches of Senn have shown that complete extirpation of the pancreas is invariably followed by death, while partial excision is a feasible operation. We are also able to define the limits of operation in affections of the spleen and kidneys. We may venture to approach the discussion of operative interference in perforating typhoid ulcer with the feeling that here we may be compelled to define a limit to the employment of surgical measures, not without regret at our inability to overcome the barriers which oppose success, but with a desire to maintain always the good repute of surgical science and art.

A clear distinction must be made between the widely different conditions which precede and follow perforation in typhoid ulcer and in ulcerations of the intestinal canal due to other causes. In typhoid fever in addition to the intestinal lesions, there is a general degenerative process involving all the important organs. In traumatism the general condition of the patient may be good. In inflammatory conditions, while the general system may be profoundly impressed, the lesion may be regarded as local in its nature. In diseases of a chronic character, the system has accommodated itself to the impression made by the morbid affection, and the degenerative changes which may occur are not usually general in character.

The symptoms are usually quite distinctive. Death, as a rule, occurs on the second or third day, rarely the fatal result may be postponed two or three weeks, and instances are recorded in which recovery has taken place, adhesions having occurred between the edges of the perforation and adjacent parts.

A careful search of current medical literature reveals but four cases of surgical interference in perforating typhoid ulcers, in all of which a fatal result occurred. The reports of these four cases were given in detail. These cases were operated on by the following surgeons: Professor Kussmaul, of Strasburg; Mr. T. H. Bartlett, of Birmingham; Dr. R. B. Bontecou, of Troy, N. Y.; and Dr. T. G. Morton, of Philadelphia. In Professor Kussmaul's case the disease was severe and perforation occurred early, when the infective process was at its greatest height and the vital forces at the lowest point. In Dr. Morton's case the disease was mild, "a walking case." In both of these cases the shock consequent upon the perforation was prompt and profound. In the first case operation was performed within a few hours, but death, without reaction from shock, occurred in eleven hours. In Dr. Morton's case operation was resorted to twenty hours after the accident. Six hours after operation the patient sank into a collapsed condition and died. The operations in these cases were performed by surgeons of experience, under strict antiseptic precautions, and within a reasonably short time after the accident. We must, therefore, look for the cause of failure in the systemic condition; the degenerated and devitalized condition of the organs and tissues caused by the infection process in active progress, utterly deprived of the power to resist the shock of operation; or in the condition of these structures beginning to recover from the effect of the poison in milder form, extremely sensitive to any rude impressions, and wanting in tone and power of resistance. It is in the latter condition alone that the surgeon may hope to achieve success by surgical interference, and then only when such methods are adopted as will reduce to the lowest point the shock of operation.

The following propositions and suggestions were offered:

(1) Surgical interference is not justifiable, and should not be instituted, in cases of typhoid fever in which perforation occurs, when the infective process is at its height.

(2) In mild cases of the disease, in which the pyrexia has not been of high grade, and in which perforation occurs at the end of the third week, or later, when the stage of convalescence is fully pronounced, laparotomy may be performed. Surgical interference in cases of this character is advocated, with the hope that if the method of operation suggested by Lücke — laparotomy, with the creation of an artificial anus — be adhered to, success may be attained.

(3) Rapidity of operation will be an essential factor in the achievement of success, through which prolonged exposure of the cavity will be avoided, and shock greatly lessened.

DISCUSSION.

DR. B. A. WATSON, of Jersey City: In cases where perforation has occurred, the sooner operation is performed, the better. He considered that it is safer to make an exploratory incision than to use the needle. In regard to the paper of Dr. Mears, it covered the ground completely. In those severe cases of typhoid fever where perforation occurs and life is about ebbing away, it would be folly to resort to operation; but in mild cases, where perforation occurs, the operation should be done early.

DR. R. B. BONTECOU, of Troy, N. Y., had performed the operation in one case of perforation in the third week of typhoid fever. The patient, however, died. He thought that it would succeed in some cases, as in those in which perforation follows imprudence during convalescence.

DR. C. B. NANCREDE, of Philadelphia, thought that the proper place for incision was two inches to the right of the anterior superior iliac spine. He had

operated in two cases. In the first there was no pus, but three or four perforations were found. This patient recovered. The second case was that of a child operated on four days ago. The patient had done well since the operation.

Dr. Gordon, of Portland, referred to the absence of symptoms met with in these cases, and cited a case in which the symptoms were not distinct, but in which a pint of pus was found, with general peritonitis and perforation of the appendix. In this case an incision on the right side would not have reached the pus.

Dr. D. W. Cheever, of Boston, reported a case in which strangulation of an old hernia occurred in the third week of typhoid fever, the patient not being seriously ill. A simple incision through the sac was made and the bowel replaced, but the patient did not rally from the shock.

Dr. W. H. Carmalt, of New Haven, referred to a case which had come under his observation with symptoms of internal obstruction. Operation was suggested, but refused. The patient died, and the autopsy showed perforation of the appendix, extravasation of fæcal matter. The appendix was attached deep down in the pelvis, where there was a small collection of pus. This was reached only with the greatest difficulty, and after turning the intestines out of the abdominal cavity. This abscess was inaccessible to any of the ordinary methods of operation. The careful exploration of the rectum in this case failed to reveal any sign of disease.

Dr. Joseph Ransohoff, of Cincinnati, thought that the general impression that perityphlitis is necessarily associated with perforation was an error. There are two classes of cases: In one there is a distinct tumor, and in these early operation is by no means indicated. In these cases adhesions have formed, and there is a natural tendency to cure. In these cases the abscess finally perforates the abdominal wall, or is relieved by incision. The second class is that in which the symptoms of perforation develop suddenly. In these cases the incision should be median.

Dr. T. F. Prewitt, of St. Louis, thought that there must be many cases of inflammation in the region of the cæcum that never suppurate. He recalled a number of these cases, only two of which had died: one from perforation, and the other, an old man, from exhaustion incident to an intestinal affection. In almost all of these cases the patients had had three or four previous attacks.

Dr. Reginald H. Fitz, of Boston, held that the appendix was the seat of disease in the great majority of cases. The symptoms usually enabled the physician to make a correct diagnosis. The use of the exploring needle was not considered advisable. The cæcum can always be readily found by remembering that it is attached to the colon.

Dr. George W. Gay, of Boston, remarked that in the cases in which he had operated, recovery had followed in those cases in which offensive pus had been evacuated; while in those where he had found only serum and flakes of lymph a fatal result followed operation.

SIMULTANEOUS LIGATURE OF THE RIGHT CAROTID AND SUBCLAVIAN ARTERIES FOR ANEURISM OF THE INNOMINATE,

by Dr. J. H. Packard, of Philadelphia.

The symptoms of aneurism followed a blow upon the chest. The patient died three days after the operation with symptoms of suffocation. No autopsy could be obtained.

Adjourned until Thursday.

THURSDAY.—THIRD DAY.

MORNING SESSION.

THE COMPARATIVE MERITS OF TRACHEOTOMY AND INTUBATION IN THE TREATMENT OF CROUP,[2]

by George W. Gay, M.D., Boston.

Dr. Gay reached the following conclusions:

(1) Intubation may be tried in all cases of croup.

(2) It is preferable in young children and in cases in which the tube must be left entirely to itself.

(3) It may be resorted to for euthanasia, provided the operator is reasonably expert, and can do it without producing collapse.

(4) Tracheotomy is called for in those cases in which intubation cannot be done, or in which it fails to give relief, or in which the laryngeal tube is repeatedly ejected or requires frequent removal for cleansing. It may also be required in those cases in which sufficient food cannot be given while the O'Dwyer tube is in position. It is also preferable in cases situated at a distance from a surgeon capable of introducing the laryngeal tube.

(5) The tracheotomy instruments should always be at hand in intubation in case of emergency.

DISCUSSION.

Dr. H. H. Mudd, St. Louis, said that intubation had been done as a precautionary measure in many cases in which tracheotomy would not have been thought of. Some of the good results of intubation are to be attributed to this fact. In most of his cases of intubation where the patient survived he had found it necessary to resort to tracheotomy. Patients have recovered after tracheotomy where intubation has proved unsuccessful.

Prof. Thomas Annandale called attention to the value of the introduction of a tube through the glottis in cases of operations about the throat where there was risk of suffocation or of hæmorrhage into the trachea.

Dr. Huber, of New York, had performed intubation in ninety-four cases, with recovery in thirty-seven. He does not operate early. He considers the internal use of bichloride of mercury as of equal importance as the intubation. There is occasionally an advantage in using a small tube with the expectation that it will be coughed out, and with it a portion of the membrane, and affording an opportunity for feeding while the tube is out.

Dr. T. F. Prewitt, St. Louis, in one case of diphtheritic paralysis, had, in order to avoid passage of fluid into larynx, passed a catheter through the glottis and plugged the larynx with a sponge. This permitted the fluid to go into the œsophagus without risk of entering the trachea. After feeding, the sponge and tube were removed.

Dr. D. W. Cheever, Boston, advocated the disuse of anæsthetics in cases of tracheotomy, provided proper assistants can be secured. The operation is not accompanied with much pain. By avoiding the anæsthetic many of the risks of the operation are avoided.

[2] This paper will appear in full in this Journal.

The next paper was entitled

PREGNANCY AND OPERATIVE SURGERY: THEIR MUTUAL RELATIONS,

by DR. L. MCLANE TIFFANY, of Baltimore.

The following conclusions were presented: (1) Pregnancy is a physiological condition, and does not contraindicate a surgical operation. (2) During pregnancy temporary strain may be exerted upon some organ, for example, kidney, inducing impairment of function. (3) A surgical operation upon a pregnant woman is to be conducted so as to avoid inducing abortion, in itself a serious accident. (4) The main cause of abortion after operation is sepsis. (5) The probability of sepsis after operation is increased if the patient is suffering from disease, either temporary or chronic. (6) Abortion may result from operation — shock perhaps. (7) Hæmorrhage does not seem to induce abortion. (8) Union of fracture may be retarded by pregnancy. (9) Recorded cases show that the unborn child receives no evil impression when the mother is subjected to operation. (10) When a surgical operation upon a pregnant woman is under consideration, the function of all the patient's organs must be carefully investigated and regulated. An operation then conducted antiseptically may be expected to result as though pregnancy were not present.

DISCUSSION.

DR. J. EWING MEARS, Philadelphia, thought that, while pregnancy was to be regarded as a physiological process in the native woman, it could not be considered in this light in the society woman. Another important point to be considered was whether the operation required was one of expediency or of necessity. In the latter case the surgeon must do his duty, let the result be what it may, but whether or not operations of expediency were to be performed on the pregnant was a question only to be decided by further experience.

DR. P. S. CONNER, Cincinnati, reported a case of subcutaneous operation for anchylosis of the knee in a woman who, it was subsequently learned, was six weeks pregnant. The operation was followed by severe septic infection, but this did not interfere with the normal course of the pregnancy.

DR. WILLIAM HUNT, of Philadelphia, raised the question whether or not, in the case of inevitable fatal injury of the pregnant woman, as from burns, it was justifiable to run the risk of sacrificing the mother a few days sooner, when by so doing the life of the child might be saved, or must we wait until the last breath has left the body before making the incision?

DR. R. B. BONTECOU, Troy, reported the case of a rupture of an umbilical hernia in a woman seven months pregnant. The intestines were out four hours. They were then cleansed and replaced. The woman recovered, and a healthy child was born one month later.

DR. J. MCLANE TIFFANY, of Baltimore, thought that in the case suggested by Dr. Hunt, there could be no question as to the propriety of operation. By so doing one life may be saved.

NERVE STRETCHING,

by DR. N. P. DANDRIDGE, Cincinnati.

The following conclusions were presented: (1) That nerve stretching should be condemned in all forms of central disease, such as tabes, myelitis, etc. (2) That it offers little prospect of relief in tetanus. (3) That it should be regarded as a reliable method in cases of persistent neuralgia and peripheral paralysis of sensation in the extremities. (4) That stretching the facial is indicated in tic-convulsiva. (5) That further trial is justified in reflex epilepsy. (6) That stretching the lingual should be tried in painful affections of the tongue. (7) That resection should always be preferred to stretching in the spinal accessory, and in the branches of the fifth nerve except the lingual.

Adjournment.

AFTERNOON SESSION.

The first paper was that of Dr. Willard.

NEPHRECTOMY;

(1) Gun-shot wound of the kidney; (2) tubercular disease of the kidney; by DE FOREST WILLARD, M.D., of Philadelphia.

CASE I. Male, mulatto, aged seventeen, was shot July 10, 1887, at such close range as to burn clothing and skin. He was able to walk one-fourth of a mile to the hospital, and the shock was but moderate. Symptoms of internal hæmorrhage steadily increased, and when seen by Dr. Willard, four hours after the injury, the signs of collapse were evident. The ball entered just above the eleventh rib, three and one-half inches from the spinous process. There was no wound of exit. Almost pure blood was voided from the bladder, and continued to flow freely. The entire left side of the abdomen was dull on percussion, and there was every evidence that there had been an escape of intestinal contents, as well as urine and blood, into the peritoneal cavity.

Abdominal incision was, therefore, chosen as best suited to arrest hæmorrhage, repair injured organs, and remove clots. The bladder was found full of blood, but uninjured; ureters the same. The huge hæmatocele was found to be retro-peritoneal, filling all the tissues in the loin and downward into the pelvis. The left kidney was traversed by the ball from the centre of the rim to the infundibulum, and the renal artery and vein cut. Aseptic silk ligatures were applied and the organ removed. The ball had passed behind the peritoneum without injuring other organs, and could not be found. No blood or fæces were found in the peritoneal cavity. The site of the extirpation was thoroughly mopped with sublimate solution, 1:10,000, made with boiling distilled water, and the abdomen irrigated with hot distilled water. The utmost precautions were taken to prevent infection, and all the dressings were thoroughly antiseptic. The temperature, during the next four days, varied from 99.4° to 101.4°. About twenty ounces of slightly albuminous urine were secreted daily. The skin was kept active, and no signs of uræmia at any time made their appearance. The patient, however, died of loss of blood, shock, and exhaustion eighty-six hours after the injury. At the post-mortem no blood or pus was found in the peritoneal cavity, and the adhesions between the serous surfaces were very slight. There was no pus at the site of the nephrectomy, and the hæmatocele was perfectly aseptic. The ball had grazed the eleventh rib, passed just below the pleura, without entering it, had perforated the diaphragm, left kidney, the renal artery and vein, and the sheath of the aorta just at the origin of the renal artery, being found lying directly upon the aorta. The right kidney was healthy.

In his remarks, Dr. Willard dwelt upon the advantages of abdominal incision, where the probabilities of other organs having been injured were so great, as hæmorrhage could be arrested, perforations repaired, and escaped fluid removed. Drainage through the loin or abdomen was not advisable, provided urine had not escaped into the peritoneal cavity before the operation. The hæmatocele, if large and retro-peritoneal, could not be thoroughly removed, and should, therefore, be allowed to remain undisturbed. All fluids in the abdominal cavity should be removed.

The three primary nephrectomies for gun-shot wounds thus far reported have all been done by Philadelphia surgeons. Keen (Trans. Amer. Surg. Assoc., Vol. V, p. 193) removed the left kidney of a girl of eighteen, in whom the ball had perforated the stomach, liver, spleen, and kidney. This patient died on the fifteenth day. Price (Trans. Penn. State Society, 1888) removed the right kidney in a girl of fourteen, in whom the liver was also perforated. His patient recovered after multiple abscess of the liver. Dr. Willard's case died on the fourth day. In none of these cases was there anuria.

CASE II. Female, aged thirty-two, married eight years, but had never been pregnant. Tubercular history of ancestry was uncertain. Failing in health for ten months. Seven weeks ago, first noticed tumor in right side of abdomen. Has had increasing pain in this region. This is now very severe at times. Has emaciated rapidly, temperature varying from 99° in the morning to 101° in the evening. Diarrhœa quite constant. Passed large amounts of pus in the urine. Urine one-sixth albuminous, but contains no casts and no distinctive cell elements. Tumor rounded in form, occupies the space from the right renal region forward to linea semilunaris, and vertically from lower margin of liver to line of anterior superior spinous process. Indistinct dulness extending into pelvis. Resonance between liver and tumor. Tumor movable.

Diagnosis uncertain as to purulent kidney or sarcoma of kidney. The size of the tumor and its projection forward determined the selection of the abdominal median incision. The right side of abdomen was found filled with thick sac, giving rise to indistinct sense of fluctuation. From it extended downward two elongated masses, one evidently a pus-filled ureter, and the other a mass extending down from the external iliac vessels and passing under Poupart's ligament. Puncture evacuated only a few drachms of pus, and did not diminish its size. Tearing open the sac, the kidney was found riddled with multiple abscesses. The vessels and the ureter low down were tied with silk ligatures and the kidney removed. The abdominal cavity was irrigated with distilled water, drainage-tubes inserted behind the uterus and into the site of the nephrectomy, and the wound closed with one set of sutures. The woman was exceedingly low during the operation, but rallied so that the temperature rose to 99°, and she became perfectly conscious. Two hours after operation she suddenly sank and died.

Post-mortem showed that behind the suppurating kidney and in a separate sac, divided from it by a wall two lines in thickness, was another pus sac. This sac was three inches wide, and the pus had worked its way down the aorta, common iliac and iliac arteries to Poupart's ligament. If nephrectomy had been attempted, this sac might have been drained and the kidney never reached at all. No hæmorrhage after operation. Death from shock. The other kidney was enlarged, but not diseased.

DISCUSSION.

DR. W. W. KEEN, Philadelphia, believed that blood exuded between the folds of the peritoneum was not a source of danger and that it might be left without interference. If we could make out that the kidney alone was injured the lumbar incision would be the proper one. Where there is a probability of injury of other structures the abdominal incision is the best.

DR. JAMES MCCANN, Pittsburgh, reported a case of nephrectomy for multiple abscess in which the patient died suddenly six hours after operation.

DR. L. MCLANE TIFFANY, of Baltimore, held that in simple gunshot wound of the kidney the proper plan was to drain the kidney through the lumbar region and not to perform nephrectomy.

DR. CHAS. T. PARKES, Chicago, reported a case of gunshot injury of the abdomen, in which in addition to a number of perforations in the bowel the ball entered the kidney. The intestinal wounds were closed. No operative procedure was performed on the kidney. The patient died from hæmorrhage from the kidney twenty-four hours later.

DR. KEEN thought that in the condition referred to by Dr. Tiffany, the proper plan was to drain, but where there is much injury of other parts, the patient will stand a better chance if the wounded kidney is removed.

DR. ROBERT F. WEIR, New York: If there is simply a gunshot wound of the kidney, the organ should be thoroughly exposed in order to ascertain the extent of the injury. Then thorough drainage should be employed, and to guard against hæmorrhage the wound should be tamponed with idoform gauze.

DR. H. H. MUDD, St. Louis, reported a case of lacerated wound of the kidney in which drainage was adopted. Irregular fever and loss of strength supervened and fifty-one days after the injury the kidney was removed. The whole organ was in a state of parenchymatous nephritis.

DR. C. B. NANCREDE, Philadelphia, had in his paper last year recommended that in gunshot wounds of the abdomen involving the kidney, an attempt should be made to save the organ when that was possible. He had also suggested packing of the kidney to prevent hæmorrhage.

DR. R. N. ISHAM, of Chicago, considered hæmaturia a pathognomonic sign of injury of the kidneys. There are two forms of laceration of the kidney, those in which the capsule is involved in the injury and those in which it is not. In the first, operation will probably be required. In the second, no operative procedure may be required.

SHOCK,[2]

by DR. DAVID W. CHEEVER, Boston.

DISCUSSION.

DR. G. W. GAY, Boston, dwelt upon the importance of preserving animal heat. He is in the habit of using a small dose of morphia hypodermically ($\frac{1}{12}$ to $\frac{1}{20}$) before beginning a capital operation. If the operation is a severe one, the patient is not removed from his bed and is given only a few whiffs of ether to obtund the pain of the first incision.

[2] This paper will be found in full on page 293.

DR. C. B. NANCREDE, Philadelphia, was in the habit in cases where it was doubtful whether or not the patient had recovered sufficiently to bear an operation of employing the "ether test." If after the administration of the anæsthetic is commenced, the pulse and the general condition improves, the patient will stand the shock of the operation. If, however, the respirations increase in rapidity and the pulse becomes frequent and weak, the ether is removed. These patients never react. Shock is often kept up by a crushed limb. In these cases the condition often rapidly improves where the limb is removed. In order to favor the flow of blood to the head, and to overcome the consequence of its collection in the abdominal vessels he had employed elevation of the limb and the application of the Esmarch bandage.

DR. LANGE, of New York, thought that the influence of loss of blood in the production of shock, was underrated. He could not recall an instance of prolonged operation in which shock followed, provided extreme loss of blood was prevented. In operations where loss of blood is apprehended, he employs large rectal injections of hot water.

DR. B. A. WATSON, of Jersey City, referred to the experiments which he had made showing the influence of ether and of chloroform on temperature.

DR. DAVID PRINCE, of Jacksonville, recommended the use of small doses of morphia with tincture of digitalis hypodermically to guard against reflex action and against depression. He considered reflex action an important cause of shock. He also advised that the temperature of the part operated upon should be maintained.

The paper was also discussed by DRS. WEIR, BONTICOU, TIFFANY, WILLARD, and MOORE.

DR. B. A. WATSON, Jersey City, moved that a vote of thanks be extended DR. C. H. MASTIN, of Mobile, for his efforts in introducing and perfecting the plan of organization of the Congress of American Physicians and Surgeons. This motion seconded by DR. E. M. MOORE, of Rochester, and by DR. WM. H. PANCOAST, of Philadelphia, was unanimously adopted.

After extending to the retiring officers a vote of thanks, the Association adjourned to meet in Washington, the second Tuesday of May, 1889.

Recent Literature.

Manual of Operative Surgery. By JOSEPH D. BRYANT, M.D., Professor of Anatomy and Clinical Surgery, Bellevue Medical College, etc. With 800 illustrations. New York: D. Appleton & Co. 1887.

In many respects this is an admirable book, for the author has shown a wise discrimination in excluding the special subjects of the eye and ear, and more elaborately considering the subjects that come to the general surgeon. The author presents his subject in a lucid style, all parts of the book being thoroughly up to date. It is less comprehensive than Stephen Smith's work on the same subject, yet it will rarely be turned to for information without satisfying the surgeon. It is thoroughly progressive, and yet, withal, very judicious. The book is replete with excellent anatomical cuts, which add greatly to the text. There are very few minor faults, and in all respects it may be fairly classed as one of the best text-books on the subject.

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THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THE Congress, according to all accounts, was a marked success. Its component societies were all well attended, and the general meetings of the evenings were full and enthusiastic. If it were possible to find any fault, it would be that too much work was attempted. The various societies vied with each other in the number of papers, and held two long sessions each day, so that when evening came many were already exhausted with the close attention paid to the proceedings of their own societies. One of the advantages to be gained from such an assemblage lies in the possibility of attending other societies than one's own. If fewer papers were read, and the meetings did not always coincide, the mutual advantages might be greater. To attend three long meetings on three successive days is exhausting.

MEDICAL NOTES.

— The yellow fever record in the south for the past week shows no amelioration. At Jacksonville the daily average of new cases has been about as it was last week, and the total up to the evening of September 23d was 1878 cases, with 212 deaths. McClenny and Gainesville report few or no new cases. The breaking out of the disease in Decatur, Ala., and Jackson, Miss., has caused a panic which has led to many unreasonable and absurd acts. Some 150 towns in the Mississippi valley, along the line of the Illinois Central Railroad, have established "shot-gun" quarantine against all points south. The embargo is so complete, it is said, as to shut out mail, medicines and physicians. Traffic on the railroad is, of course, practically suspended. The city of Chattanooga, for instance, has offered a reward of $25 for the detention of any refugee from any infected district, with the effect of making every person in the city a detective, and has excluded all trains, traffic, or freight upon any of the railroads, county dirt roads, or any other modes of entrance into Hamilton County, Tennessee, except passengers and freight

from the Cincinnati Southern Railroad, and even the passengers and freight received by this road from south of the Kentucky State line share in the exclusion. Northern cities continue to subscribe liberally for the sufferers. Boston's contribution up to the present time being considerably over $10,000.

— One of the meritorious forms of charity, which deserve to be encouraged, is the sending of sick children from their unhealthy city homes, that they may breathe the fresh air of the country for a few weeks. An innovation in this work has been introduced by the Germans, which is worthy of note. The Berlin society which interested itself in the good work, finding that the means at its disposal were not sufficient to send a large number of children a long way into the country, economized by erecting large tents near the city, in places where the two requisites of pure air and water can be found. In this way the cost of transportation was largely reduced, and consequently about five times as many children as formerly can be accomodated. — *Sanitary Inspector.*

— What an almost universal vaccination of a people can do in diminishing the small-pox death-rate is shown by recent statistics for the German Empire, in which the practice of vaccination and re-vaccination is compulsory. For the year 1886, the small-pox death-rate for the whole empire was only .03 to each 100,000 of the population. In the larger cities it ranged from .07 in Berlin, to 3.6 in Hamburg. Compared with the German cities, the rates in other European cities ranged from .06 in London to 4.9 in Liverpool; Paris, 9.0; Brussels, 11.4; St. Petersburg, 15.3; Moscow, 34.1; Vienna, 26.2; Venice, 51.6; Rome, 134.3; Genoa, 153.8; Budapest, 368.7; Marseilles, 545.3, to the 100,000. More than two-thirds of the deaths from small-pox in Germany were in cities like Hamburg, which have a large foreign shipping trade, and in those districts which lie immediately along the Russian and Austrian borders.

— The beneficial influence of the sea-side air for sick school children of the poorer classes was first appreciated in Italy, and the idea was there first put into practice by the establishment of hospices, or sea-side resorts, for this class of little ones. Since the establishment of the first in 1856, twenty of these stations have been built, thirteen on the Mediterranean and seven on the Adriatic coast. More than one hundred special committees send thousands of suffering children to the sea-side every year. According to the report of the general secretary of the Italian Public Health Society, 25,000 sick and scrofulous children have been received and treated at the Mediterranean stations. Of these, 25 per cent. were cured, and 62 per cent. improved. At the stations of the Adriatic the number of the little patients has been 20,000, with 27.5 per cent. of cures and 61.3 per cent. improvements. At the present time these sea-side stations for scrofulous children exist in almost all civilized countries. — *Sanitary Inspector*, from the *Zeitschrift für Schulgesundheitspflege.*

— In the *Bull. Gen. de Thér.* for August 30, 1888, a letter from a Dr. Fort, of Montevideo, furnishes an account (from the pen of an eye-witness) of the painless removal of a wen while the patient was in the hypnotic state. The wen was situated on the forehead, and an incision of five centimeters in length was necessary to extract it. All was done without the slightest sign of pain, and the patient assisted the operator by movements of the head, etc. Questioned afterward, the patient remembered nothing of what had gone on.

— *A Terrible Mistake.* "Man Peter," said a Scotch quack doctor to his apprentice, "ye maun aye be awfu' cautious in pharmacy. Even I ance made a terrible mistake." I was attending Mrs. Kittlebody, who was sair fashed wi' tickdolaroo, an' I was called upon by John M'Fikert, wha's croon was sae thin o' hair — as weel as sence — that he was ashamed o't, especially as he was coortin' a strappin' young widow that had a fine public hoose; an' I mixed up baith portions at the same time, an', losh sake, man, I happened tae gie them ilk ither's medicine. So puir John, rubbing Mrs. Kittlebody's preparation for her ticdolaroo on the tap o' his head, declares he's had a bee in his bonnet ever since; an' Mrs. Kittlebody, rubbin' her jaws wi' the ointment intended for John's bald pow, in less than a fortnicht had a pair o' whiskers the envy o' a' the young men o' the village. — *Chemist and Druggist.*

— According to observations made by Dr. Sweeting, Medical Superintendent of the Western District Hospital, London, the proportion of albuminuria in scarlet fever has been steadily increasing in that institution for the past four years, rising from 19.1% in 1884 to 34.9% in 1887. Inasmuch as the same test (picric acid) was employed, with the same frequency and by the same officer, under his personal supervision, the increase he is forced to think real, and not apparent. Specially made statistics showed him that the season had no influence, and special experiments that the ventilation was not to blame. Dr. Sweeting's explanation finds its basis in the overcrowding of the wards which has been necessary, and, amongst other confirmations of this, a strong support attaches to it from the fact that in the London Fever Hospital overcrowding has invariably been followed by an increase in the number of patients showing albuminuria.

— A reported claim for a special pension is that the applicant got cold in the drafts of 1864.

— In the *Practitioner* for August, 1888, Dr. Samuel West gives a fresh set of figures for the frequency of heart complications in rheumatism. The cases admitted to St. Bartholomew's Hospital during a period of six years furnishes the basis for these statistics. These were 1,137 in number, and the heart was affected in 70.86%. Only cases of "rheumatic fever" were selected, a disease which West believes distinct "from what is ordinarily called rheumatism," and the test was the persistence of a distinct murmur till the patient left the hospital. The pericardium was affected alone (?) in 6.48%, and with the endo-

cardium in 7.5%. Referring to the much lower percentages of other writers, especially German, West expresses his belief that many cases are included which do not come under the heading of rheumatic fever.

— Dr. T. E. Satterthwaite, a short time ago, showed the New York Post-Graduate Clinical Society a new stethoscope that he had used for some time with great satisfaction. The bell-shaped pectoral piece of hard rubber, and measuring about one and one-quarter inches in either dimension, is divided into two chambers, of which the inner one only communicates with the ears through the two regular tubes. In the outer chamber, however, the air is exhausted by a rubber bulb connected with the chamber by a tube, and in this way the walls of both chambers adhere tightly to the chest. Naturally, sound from without is effectually shut off at that point, and as the instrument is said to be very easy to manage, and especially useful when the patient is in bed, it may be found an improvement on the old. The stethoscope is made by P. W. Soule, a dentist of Woonson (Monson ?), Mass.

— The Lee pure food bill, ordered, as we learn from the *American Analyst* of August 1st, to be reported by the House Committee on Agriculture, provides that "any person, persons or corporations causing to be made, manufactured, sold or offered for sale, or transported from one State into another, or into any territory or reservation of the United States, or into the District of Columbia, or exporting from the United States, or any transportation company transporting from one State into another, or from or into the United States any adulterated or misbranded articles of food, liquor or drugs, shall be deemed guilty of a misdemeanor, and upon conviction shall pay a fine of not less than $100 nor more than $1,000 for each offence, and upon conviction a second time may be imprisoned at the discretion of the court." The bill also provides for the creation in the department of agriculture of a division to be known as the food division, equipped with a chief and corps of assistants. In addition, a chemist shall be appointed by the President with assistant chemists in New York, Boston, Philadelphia, Charleston, Savannah, Mobile, New Orleans, Galveston, St. Louis, Chicago, Cincinnati and San Francisco. The President shall also appoint one food inspector for each State and territory and the District of Columbia, and two assistants may be appointed by the inspector when necessary, whose duties shall be to sample any article of food, drink or drug, and have the same properly verified and analyzed by the food chemists. They shall inspect slaughter houses, and have microscopic and analytical tests made of slaughtered animals, and when they find adulterated articles of food, drink or drugs, or tainted or diseased meat sold or offered for sale in violation of this act, they shall present the facts, properly verified under oath, to the district attorney, who shall immediately proceed to prosecute all violators of this act in the courts of the United States.

— The final results of operations are not always known to surgeons, and great care is often necessary to find out the later history of the subjects of serious operations. As a contribution to our knowledge of the post-operative life of a serious case, the following from the *Chicago News*, July 23d, is given for what it may be worth :

A nice-looking, well-dressed young man walked into a Washington Street barroom about ten o'clock last night, and, proffering the requisite nickel, ordered a glass of beer. The beverage was placed on the bar, and then the young man calmly proceeded to paralyze the barkeeper and a crowd of thirsty theatre-goers who had dropped in between acts. He first took from a clasp on his vest one end of a slender rubber hose, the other end of which was hidden by his clothing. He removed a plug or cap from the end of the hose, and inserted in it a small silver funnel which he took from his side pocket. He then proceeded to pour the contents of the schooner into the funnel, accompanying the performance with a series of long-drawn breaths. When asked for an explanation, he coolly said he had poured the beer into his stomach. Everybody was amazed, and hinted at trickery, but the stranger quietly bared his body and displayed the spot where the hose was inserted into his stomach.

The only explanation he gave for the strange appliance was that a year ago he was taken with a cold, which so affected his throat and stomach that he could no longer take food in the regular way. Surgeons could not relieve him, but they rigged up the funnel and hose, made an incision in his bread-basket, and ever since he has lived on milk, beef-tea, and such other liquids as his fancy dictates. He enjoys good health, and expects to live indefinitely. He said that while, of course, he could not distinguish one kind of nourishment from another by means of taste, he could feel the effects of liquor the same as other people. In fact, he claimed the ability to get as drunk as any lord, if he felt inclined.

"Why don't you go into a dime museum?" was asked. "Because I've got a better scheme right here," was his answer, and he drew from his pocket a bundle of his photographs illustrating his novel mode of taking food. He had no difficulty in disposing of his stock on the spot, and after the crowd had treated the funnel to several more glasses of beer, he hurried away.

NEW YORK.

—A conference, at which the Rev. Dr. Wm. R. Huntington, rector of Grace Church, presided, was held at Grace Chapel, September 11th, in the interest of the Church of England Burial, Funeral and Mourning Reform Association, of which a local branch has been established in New York. The principal address was made by the Rev. Frederick Lawrence, secretary of the parent Society, who came to this country to promote the objects of the Association here, and one of the points upon which most stress was laid was that the coffin should be made of some perishable material.

During the course of his remarks he exhibited a miniature casket of pulp as a specimen of what is now being used to a considerable extent in England. The coffin, he said, was the immediate proximate cause of all the evils which it was the object of the Association to remove, and early interment would have a sanitary as well as an economical effect.

—Dr. Cyrus Edson, Chief Inspector of the Division of Contagious Diseases in the Health Department, has recently caused the arrest of an undertaker for exposing persons in a tenement-house to a contagious disease by his neglect to comply with the requirements of the sanitary code regarding such affections. On the evening of September 4th two young children died in the tenement-house referred to, of scarlet fever, and the next morning an inspector of the Board of Health found the bodies exposed on a table in the apartment in which they died, instead of in sealed caskets, as prescribed by law. The inspector, Dr. Dillingham, then went to the undertaker who was in charge of the funeral and warned him that he was disobeying the sanitary code, when the latter expressed contempt for the law. He was accordingly arrested and held for trial, and it is to be hoped that he will be duly punished, so that his case may serve as a much-needed warning to others.

— The twenty-fourth annual meeting of the United States Veterinary Medical Association was held at the Rossmore Hotel, September 18th, when the following officers were elected for the ensuing year: President, Dr. Rush Shippen Huidekoper, of Philadelphia; Vice-President, Dr. W. B. E. Miller, of Camden, N. J.; Secretary, W. B. Haskins, of Philadelphia; Treasurer, James F. Robertson, of New York. Among the subjects discussed was tuberculosis, and a resolution, offered by Dr. L. McLean, of the New York College of Veterinary Surgery, was adopted, to the effect that, as there was reason to believe that bovine tuberculosis may be transmitted to man by the ingestion of the meat and milk of animals affected with this disease, the attention of the National Government should be directed to the prevalence of the disease, particularly among milch-cows in the Eastern States, and the danger likely to result therefrom. A Committee was then appointed to proceed to Washington and lay the matter before the National Congress of Physicians and Surgeons.

— As there seemed to be little question of the correctness of the diagnosis in the case of the late Professor Proctor, no autopsy was made at the time of his death. On the 16th, however, at the request of Mrs. Proctor, made at the suggestion of a friend who accompanied her from the South, and who expressed the opinion that her husband had died of malarial, and not yellow fever, a post-mortem examination was made at the hospital on North Brother Island by Drs. T. Mitchell Prudden and H. M. Biggs, pathologists to the Board of Health, in the presence of Dr. Cyrus Edson, Chief Inspector of Contagious Diseases, Health Commissioner Joseph D. Bryant, and others. The preliminary report of the examination, presented to the President of the Board of Health, is as follows:

"Decomposition was so far advanced that it was impossible to arrive at a definite conclusion as to the cause of death. The organs presented no evidence whatever of pernicious remittent fever or other form of malarial disease, such as, even in the condition of decomposition presented by the body, would ordinarily be apparent. The only positive change due to disease which could be made out was in the kidneys, which showed the appearances of old, though not advanced, disease. The alterations produced in the body by yellow fever are usually of such a character as to be nearly or completely obliterated by advanced decomposition. We are, therefore, only able to say in this connection that there was no other evident cause of death, and nothing which could be incompatible with that disease. The final conclusion as to the cause of death must, therefore, in our opinion, be largely based upon the clinical history."

— The corner-stone of the new St. Joseph's Hospital at Yonkers was laid by Archbishop Corrigan on Sunday, September 23d. The site of the Hospital is on a high cliff overlooking the Hudson, and the buildings will be substantial and thoroughly equipped. The estimated cost is $140,000.

— Mrs. Rachael Stillwagon, of Flushing, Long Island, celebrated her 103d birthday on September 17th. She was born at Tarrytown, on the Hudson, in 1785, was married in 1811, and has been a widow since 1825. Of seven children born to her, three are still living, all of them being over 70 years of age. She comes of Dutch ancestry, and her grandmother is said to have lived to be 106 years old.

Miscellany.

THE ARREST OF HÆMORRHAGE FROM WOUNDS OF THE PALM OF THE HAND.

Dr. R. J. Levis, writes as follows in the *Medical and Surgical Reporter*:—

"My experience with hæmorrhage from wounds of the palmar arches is that it is usually controllable by maintaining extreme elevation of the hand. This is most thoroughly effected, and with the least discomfort to the patient, by vertical suspension of the limb, the attachment being made along the palmar and dorsal surfaces of the forearm by adhesive strips, after the ordinary manner of making extension in the treatment of fractures. A cord from the adhesive strips may be fastened to the top of a bed-post or other convenient elevated point.

"If posture alone should not arrest the hæmorrhage, the most effective compression can be made by placing in the palm of the hand an India-rubber ball or a ball solidly made of cotton wadding, and on this the fingers and thumb should be closed and bound tightly with a roller bandage.

"Using these expedients I have never been obliged to ligate arterial trunks for the arrest of hæmorrhage from the palm of the hand."

CHINESE "NERVELESSNESS."

THAT China is at least in some respects the moral antipodes of America as well as its geographical one, is shown by a writer in the *North China Herald* of Shanghai, who has lately been devoting a series of articles to the discussion of Chinese characteristics, referring to what he calls the "nervelessness" of the Chinaman, this author observes that, although the nerves of the Chinaman as compared with those of a European, may be what geometricians call "similar and similarly situated," nothing is plainer than that the two sets of nerves are wholly different. It seems to make no particular difference to a Chinamen how long he remains in one position. He will write all day, like an automaton; he will stand all day in one place from dewy morn till dusky eve working away at his weaving, gold-beating, or whatever it may be, and do it every day without any variation of the monotony and apparently without any consciousness of the monotony. Chinese school-children will undergo an amount of confinement, unrelieved by recesses or changes of work, which would drive Western pupils to the verge of insanity; even Chinese infants remain as impassive as "mud gods." It appears a physiological fact that to the Chinese exercise is superfluous; they cannot understand why people should go through athletic performances when they might hire coolies for the purpose. In the matter of sleep there is the same difference. The Chinaman, generally speaking, is able to sleep anywhere. No trifling disturbances annoy him. With a brick for a pillow he can lie down on his bed of stalks, or mud bricks, or rattan, and sleep the sleep of the just, with no reference to the rest of creation. He does not want a darkened room nor does he require others to be still. The "infant crying in the night" may continue to cry, for all he cares; it does not disturb him. In some places the entire population seem to fall asleep as by a common instinct during the first two hours of summer afternoons, no matter where they may be. In the case of most working people at least, and also in that of many others, position in sleep is of no sort of consequence.

REED & CARNRICK'S SOLUBLE FOOD.

In the JOURNAL of August 2, 1888, was published an analysis of Carnrick's Soluble Food, copied from, and credited to, the Report of the New Jersey Dairy Commissioner.

Dr. Newton, the Commissioner, has forwarded to us a circular, recently issued, bearing upon the same subject, to which it is necessary we should, in common honesty, give equal publicity to that given the first quotation. The circular is as follows:

STATE OF NEW JERSEY.
OFFICE OF THE DAIRY COMMISSIONER.
PATERSON, N. J., Sept. 19, 1888.

IN the report of this department to the legislature for the year 1887, an article by Prof. A. R. Leeds, entitled "Foods for Infants and Invalids," was published.

Messrs. Reed & Carnrick have, in a communication to this office, taken exception to some of the statements therein made, claiming that the amount and character of the ingredients of their food preparations were misrepresented. In order that these gentlemen might receive full justice, I offered to have the analytical work revised by a chemist of reputation, who had never had any business or professional relations with either the State or Reed & Carnrick; and it was also stated that the results of this series of analyses would be published by this office.

Accordingly, Prof. Elwyn Waller, Professor of Analytical Chemistry at the School of Mines, Columbia College, New York, was requested to purchase a package of "Carnrick's Soluble Food" in the open market, analyze the contents thereof, and report the results to me. Below is a copy of his report.

"I examined a sample of 'Carnrick's Soluble Food, (purchased by myself from Eimer & Amend). I find that 38.26 per cent. of the albuminoids which it contains are in the soluble form.

"The sample also gave readily, the biuret resection for peptones. I failed to detect in the food, when moistened, any of the 'hard, unchanged particles of casein' which it has been asserted that it contains.

"My results lead to the conclusion that the casein in the preparation has been partially rendered soluble by the action of the digestive ferment as claimed by the manufacturers."

(Signed) ELWYN WALLER, PH.D.

I append herewith a letter on this subject that I have received from Prof. A. A. Breneman, S.B., formerly Professor of Chemistry at Cornell University, now analytical chemist at 97 Water Street, New York.

WM. K. NEWTON, *Commissioner.*

NEW YORK, September 18, 1888.

DR. W. K. NEWTON, *State Dairy Commissioner of New Jersey.*

Dear Sir, — The report of your department for the year 1887, refers to certain preparations made by Reed & Carnrick, of New York, in a way which, from my knowledge of their work, seems to do them injustice.

The statements to which I especially refer are:

(1) That the milk solids in the preparation known as Carnrick's Soluble Food contains merely the dried casein of the original milk, neither changed nor modified by any process of digestion.

(2) That the analysis of this food given in the Report of the State Board of Health of New Jersey for the year 1885 correctly represents it, giving as it does only 10.25 per cent. of total albuminoids.

(3) In the analysis of the preparation known as Liquid Peptonoids (New Jersey State Dairy Report, 1887) the proportions of alcohol and albuminoids there given are made the basis of comments which are extravagant in language, and unnecessarily severe.

On February 20, 1888, I made, at the request of Reed & Carnrick, a test of the peptonized milk received in good condition from their factory. Of the albuminoids of the original milk 46.6 per cent. were found to be rendered soluble (that is, no longer precipitable by boiling or by acids). Through the process of digestion such soluble nitrogenous matters must, under the circumstances, consist of peptones, albumoses and caseoses, products of the modification of the original albuminoids of the milk by digestion.

Having made many analyses of this food during the past three years, I have never found the proportion of albuminoids to run below 16.5 per cent. as determined by combustion with soda-lime. The average of fifteen analyses, made since January 1, 1887, shows 18.96 per cent. of albuminoids. These results also agree well with the analyses of the same food made by Stutzer and other well-known chemists.

As to the liquid peptonoids, the proportion of albumi-

noids is limited only by the quantity which can be kept unchanged in solution. 16 per cent. of alcohol is necessary to prevent decomposition of the albuminoids and no quantity greater than three per cent. of these can be held in solution in this liquid. Many attempts have been made to accomplish a better result, but in all cases the excess of albuminoids was deposited after a time, or (with reduced proportion of alcohol) decomposition of the albuminoids occurred.

Very respectfully,

A. A. Breneman,
Analytical and Consulting Chemist.

Correspondence.

THE RECENT MEDICAL CONGRESS.

Washington, September 21, 1888.

Mr. Editor, — You were good enough to ask me for my observations on the Congress; and I have written you this short account of the affair, telling you what I saw, and what I thought about various questions. I have written in the first person, for I propose to tell you what I saw without being so egotistic as to say that things looked to everybody as they did to me.

The dinner that preceded the Congress does not seem to have differed very much from similar dinners on previous occasions. The night was too hot for the highest degree of comfort. If any one failed to find pleasure in it, it was not the fault of the Washington officials, who certainly did all that could be done to make everything connected with the Congress the success it certainly has been.

The various societies worked hard, and a good audience was nearly always present at every paper. Special interest was felt in the general meetings, and the audience in the Grand Army hall on both evenings was very large, and must have embraced, not only nearly every doctor in the Congress, but many outsiders also.

There was a very considerable curiosity to see and hear Dr. Senn. He has been an original and untiring worker, and has contributed not a little to our knowledge of what may be done with the intestines of animals as a preliminary study to what may be done with human intestines. There were obscure rumors of distinguished and extraordinary professorships within his grasp. He was billed, not only for this meeting, but for a paper on Bacteriology in the Surgical Association, the title of which paper filled over a page in the programme. He was the author of a series of letters which were published in the *Journal of the American Medical Association* not long ago. These letters dealt very frankly, even bluntly, with men who showed him politeness in Europe. His own criticisms were so frank that over-delicacy in describing the man himself seems out of place; and, moreover, he has done such good work that he can afford to have disagreeable things said of him.

He mounted the platform with a thick pile of manuscript, and preceded by various anatomical preparations in the hands of others. Laying down the manuscript on the table, he found little further use for it. He began his talk with an attack upon the paper which had preceded, which was hardly called for. His talk was exceedingly diffuse, his manner theatrical; and when it was already half-past nine, and our chairs had grown hard beneath us, Dr. Billings passed him a paper, which he read with some surprise, evidently. He then said, "The chairman tells me I can have but ten minutes more. Why, gentlemen, I have hardly begun!" which, without doubt, was true; for he had really made no advance toward telling his audience what he really had to tell, and what we were anxious to hear. That he should be surprised and disappointed was not strange; but that he should go on to say "I shall *not* stop until I have shown what I came here to show," showed him to be too straightforward and honest to conceal a rebellious heart beneath a polite acquiescence. He then went on to tell something about his bone tubes, his anastomoses of the intestines, and his injections of hydrogen gas, but it was hard work to condense all into so short a time, and he overran the ten minutes. His audience was good-natured, but tired; and they applauded the speaker liberally, but in a way to assist him to a conclusion.

It was not easy to explain exactly why Dr. Senn failed to present his experiments and his conclusions more acceptably. One explanation was that his results had cost him months of work, and he did not mean his hearers should be spared an equal amount of labor. Another was that he was suffering the effects of previous adulation.

Other gentlemen were on the programme to discuss these two papers, but they voluntarily requested that their time should be given to some of the foreigners present. The chairman called upon Mr. Arthur Durham, of Guy's Hospital, London, who rushed upon the platform, and addressed his audience in a very spirited manner. With an excited manner and exuberant gestures, he said he must express his pleasure at the handsome manner in which he had been entertained. He then went on to say what he had to say on the subject of intestinal occlusions; and notwithstanding a manner which was not impressive, his little speech seemed to me one of the most successful I ever listened to.

He was followed by Mr. Ord, in a quiet statement of his own opinion, in simple, polished language.

Dr. Billings then called upon Mr. Annandale, of Edinboro', who ran up the steps as though it was the great pleasure of his life to address us, though he told us he had not been half an hour in the city, and was but just off the steamer. He had not heard what had gone before, and gave us simply a brief statement of his own views.

The Englishmen who were present at these meetings gave me personally great pleasure. They were everywhere, always interested, always ready to say they were interested, and always ready to add their own opinions and experience to any discussion when called upon to do so. They were noble specimens of our race and our profession, — picked specimens I ought to say

Washington has great advantages as a meeting place. It is distinctly a medical centre, but its ways and its hotel ways in summer are not particularly agreeable to the Northerner, — I mean to myself. Something did not agree with our digestive tracts, and many had fearful tales to tell of sleepless nights and still more anxious days. The trouble was not distinctly ascribed to the drinking-water, but the water was very distinctly shunned after the first day. Some of the men were actually sick in bed, and started early for home.

Doctors are not a very enthusiastic class of men; but nobody who went out to Arlington Heights and gazed on those 10,000 nameless graves escaped a new emotion.

The reception tendered the Congress by President and Mrs. Cleveland was a graceful attention on their part, which was duly appreciated. It was the only break in the close attention to business that the hard-working doctors indulged in. The reception on the evening of Tuesday was an exceedingly pleasant meeting.

Boston seems to have received a full recognition this year in the societies. Three have chosen Boston men for presiding officers for the ensuing year; while two others have Boston men for Secretaries, and three societies have chosen Boston as their place of meeting next year. *

— *A Terrible Diagnosis.* A certain fashionable Indianapolis lady visited an old friend, a Cincinnati doctor, accompanied by her daughter. "There is something the matter with Jenny's voice," remarked the anxious mother. After a careful examination the doctor solemnly said, "Madam, your daughter has a mezzo-soprano." "What!" exclaimed the mother bursting into tears. "Then she is incurable; that's what carried the Emperor William off, according to Mackenzie." Fee paid, and doctor smiled.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 15, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	736	354	28.70	13.16	16.94	2.66	2.80
Philadelphia	1,016,758	358	147	19.04	14.56	5.88	8.12	2.52
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	205	95	21.60	4.95	8.10	2.25	6.30
Baltimore	437,155	—	—	—	—	—	—	—
Boston	407,024	212	95	22.56	14.57	15.98	1.41	3.29
Cincinnati	325,000	90	—	15.54	6.66	8.88	—	4.44
New Orleans	248,000	—	—	—	—	—	—	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	108	46	34.96	12.88	15.64	10.12	4.60
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	17	5	5.88	17.64	—	5.88	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	27	10	18.50	7.40	14.80	—	—
Charleston	60,145	—	—	—	—	—	—	—
Portland	40,000	—	—	—	—	—	—	—
Worcester	76,328	37	21	32.40	10.80	27.02	5.40	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	—	—	—	—	—	—	—
Fall River	61,203	43	28	30.29	20.97	20.97	—	2.33
Lynn	51,467	17	—	29.40	23.52	23.52	—	5.88
Lawrence	40,175	13	6	—	15.38	—	—	—
Springfield	39,952	7	3	28.56	14.28	14.28	—	14.28
New Bedford	36,298	14	7	50.00	—	35.71	14.28	—
Somerville	33,307	12	7	50.00	8.33	25 00	8.33	8.33
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	10	5	20.00	—	—	10.00	10.00
Chelsea	27,552	11	4	9.09	27.27	—	—	—
Haverhill	24,979	10	3	10.00	—	10.00	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	5	5	40.00	—	40.00	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	5	2	40.00	20.00	20.00	—	—
Malden	18,932	6	2	16.66	—	16.66	—	—
Fitchburg	17,534	6	3	50.00	—	16.66	—	—
Waltham	16,651	2	0	—	—	—	—	—
Newburyport	13,839	3	2	33.33	33.33	33.33	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 1,954: under five years of age 850; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 485, consumption 238, acute lung diseases 127, diarrhœal diseases 262, typhoid fever 75, diphtheria and croup 64, whooping-cough 28, scarlet fever 24, malarial fever 16, measles 10, small-pox one, yellow fever one. From whooping-cough, New York 13, Boston and Washington four each, Philadelphia three, Cincinnati two, Chelsea and Fitchburg one each. From scarlet fever, New York 17, Philadelphia three, Fall River two, Washington and Nashville one each. From malarial fevers, St. Louis nine, New York six, Philadelphia one. From measles, New York eight, Philadelphia and Fall River one each. From small-pox, Philadelphia one. From yellow fever, New York one.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273 for the week ending September 8th, the death-rate was 17.8. Deaths reported 3,205: infants under one year 1,086; acute diseases of the respiratory organs (London) 148, diarrhœa 414, whooping-cough 66, scarlet fever 55, measles 41, fever 34, diphtheria 28.

The death-rates ranged from 12.7 in Bristol to 25.1 in Norwich: Birmingham 17.8; Bradford 16.1; Hull 15.5; Leeds 24.4; Leicester 22.8; Liverpool 22.4; London 16.0; Manchester 22.6; Nottingham 15.1: Sheffield 20.6; Sunderland 15.4.

In Edinburgh 16.9; Glasgow 18.5; Dublin 21.7.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING SEPTEMBER 22, 1888.

CABELL, A. G., passed assistant surgeon. Ordered to the Naval Hospital, Chelsea, Mass.

BAKER, J. W., passed assistant surgeon. Detached from the Naval Hospital, Chelsea, Mass., and to the "Palos."

LEACH, PHILIP, passed assistant surgeon. Detached from "Palos" and granted six months' leave abroad.

SIMONS, M. H., surgeon. Detached from Naval Academy and wait orders.

HARMON, G. E. H., surgeon. Ordered in charge Naval Academy.

PICKRELL, GEO. M. C., assistant surgeon. Detached from the "New Hampshire" and to the "Ossipee."

ARNOLD, W. F., assistant surgeon. Ordered to the "New Hampshire."

HENRY, C. P., assistant surgeon. Detached from the "Ossipee" and granted sick leave.

CORDEIRO, F. J. B., assistant surgeon. Promoted to passed assistant surgeon.

SPEAR, J. C., and RHOADES, A. C., medical inspectors. Placed on the retired list September 14th.

SOCIETY NOTICE.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.—At the meeting of the Society on October 3d, at 12 M., in the hall of the Boston Medical Library Association, a series of papers on Poisoning by Arsenic, will be read by Dr. S. W. Abbott, Prof. W. B. Hills, Prof. F. W. Draper, Drs. A. F. Holt, F. A. Harris, T. M. Durell and others. Discussions will be led by Prof. E. S. Wood, Prof. R. H. Fitz and others. As it will be impossible to complete the subject in one meeting, the papers will be presented until all are read, at the stated meetings of the Society, which occur at the same place and day as the Councillor's meetings of the Massachusetts Medical Society. The profession are cordially invited to attend.

W. H. TAYLOR, *Recording Secretary.*

DEATH.

Died in Ipswich, Mass., September 24, 1888, Yorick Gordon Hurd, M.D., M.M.S.S., aged sixty years.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the State Medical Society of Arkansas. Fort Smith, 1888.

Cellular Digestion; Its Utility in Pathological Processes. By N. S. Davis, Jr., A.M., M.D., of Chicago, Ill. Reprint.

Original Articles.

NEW FORM OF POSTERIOR COLPORRHAPHY.

BY J. H. KELLOGG, M.D., OF BATTLE CREEK, MICH.

THE necessity for some relief from the distressing inconveniences attending complete procidentia and extreme cases of prolapse of the vaginal walls, has led to the origination of a great variety of operations for the purpose of diminishing the size of the vagina, a procedure commonly known as colporrhaphy. As each new method has been brought forward by its originator, it has been advocated as obviating the defects of methods previously employed. But, one by one, the various methods thus far introduced have proved wanting. The difficulty experienced with all methods alike has been that however much the vaginal canal might be narrowed by the operation, the wedge-shaped uterus, steadily acting in a downward direction, has in time succeeded in reproducing the original condition. The one exception to this history of failure has been the median colporrhaphy of Lefort. But this procedure admirable as it is in the cases to which it is adapted, is evidently justifiable only in the cases of women who have passed the menopause, since the strong median raphe produced by the operation necessarily presents an insurmountable barrier to parturition. There are also cases in which this operation might be considered objectionable upon other grounds. After making thorough trial of the various approved forms of colporrhaphy for the relief of subinvolution, cystocele and procidentia, I some five or six years ago adopted a method of operation which, so far as I know, is novel, and which it is the purpose of this paper to describe.

This operation is especially adapted to the posterior wall of the vagina. The operation consists in the removal of a longitudinal strip of mucous membrane from the posterior vaginal wall, the form of which is indicated in the accompanying cuts. The peculiarity of this part of the operation consists in the bifurcation of the denuded surface at its inner extremity, the cornua being made to converge and extend upward on either side of the cervix so as to include about two-thirds of the circumference of the vaginal canal. The purpose of this form of denudation is to create, by uniting the edges of the wound, a pouch to receive the cervix uteri, the advantages of which will be presently explained. The surfaces of the wound are united in such a manner as to produce not simply a superficial line of union, but, in addition to this, an artificial thickening of the posterior vaginal wall subjacent to the superficial line of union, for the purpose of strengthening the relaxed and weakened structures. The following is a brief description of the operation:

The operation consists of four steps —

(1) *Mapping out the area to be denuded.*—The patient being placed upon her back in the lithotomy position, the vaginal orifice is enlarged by means of retractors so as to bring the cervix uteri into view and enable the operator to determine the amount of narrowing required. I mark out the area to be denuded by means of traction sutures ten or twelve inches in length, which are introduced thus: Seizing the mucous membrane in the median line about one inch in front of the cervix A (this suture is not shown in the cut) a needle armed with a piece of suture silk about two feet in length is passed through the fold of membrane held by the forceps, and the two ends tied. The hold of the seizing forceps being now released, the mucous membrane is seized at another point to the right or left, one-third of the circumference of the vagina. A traction suture is introduced as before, and another upon the opposite side in like manner, B and C, Fig. 1. Other traction sutures are introduced at points marked D, E, F, G, H and I. Finally, the external points J and K are fixed, and indicated by a slight incision, or a snip with the point of the scissors.

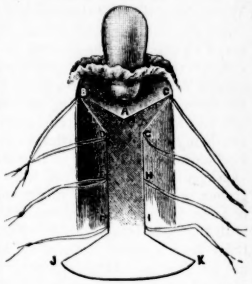

FIG. 1.

(2) *Denudation.*—Starting at K, remove a strip of mucous membrane along line of union between the skin and the mucous membrane reaching to J. A similar strip is removed along the line K I, and another on the line J F. The space included between the points K I and J F may now be rapidly denuded by dissecting off narrow strips from right to left. Now drawing down the traction sutures attached to the points I and H, a fold of membrane is raised up, along the crest of which a strip of membrane may be dissected up, reaching from I to H. In a similar manner dissect up a strip on the opposite side. Now denude the surface up to the points E H in the same manner as before. Then make taut the traction sutures H and G so as to raise a fold, and proceed as before. In like manner the sutures G C, D B, A C and A B, are successively drawn down, and the spaces enclosed between the points G C A and D B A are denuded. Hæmorrhage during the process of denudation is usually controlled by a stream of hot water sterilized by corrosive sublimate in proportion of one to four thousand, which is kept constantly flowing. Any troublesome bleeding points are secured by means of small snap forceps, which are allowed to remain in position until the edges are brought together in closing the wound. Ligatures are seldom required.

FIG. 2.

(3) *Introducing the sutures.*—We are now ready for the introduction of the sutures, Fig. 2, one of the most important parts of the operation. Two lines of sutures are introduced in the vaginal portion of the wound; (*a*) continuous deep suture; (*b*) a continuous superficial suture. Beginning at the apex of one of the cornua, a medium-sized catgut suture about fifteen inches in length is secured and the sides of the denuded surface carefully brought together by a buried suture from B to A. The needle should be slightly curved, being made to dip as deeply as possible without involving danger of wounding important structures. By this means the line B D is made to approximate closely to the line B A. By means of another suture,

which should be about eighteen inches in length, the edges of the mucous membrane defined by the lines B D and B A are now united by superficial sutures. When the closure of the edges of the triangle is complete, the suture should not be cut off, but should be saved to complete the closure of the superficial portion of the remainder of the vaginal wound. The cornua A G C is now treated in like manner, only that the deep suture is left long to serve as a deep suture for uniting the sides of the vaginal wound. The cornea being closed, the portion of the wound having parallel sides is next closed in like manner. I find it advantageous to carry the two lines of sutures down together, making the deep suture superficial at intervals of an inch, so as to closely unite the mucous membrane with the underlying tissues. The perineal portion of the wound is closed in the usual manner, only I do not use silver wire. If the sphincter has been torn, I employ a form of suture pin having an eye near the point, which I described in a paper published in the proceedings of the American Medical Association for 1887. I have continued the use of these pins, and consider them a great advantage over wire or any other for of suture for perineal operations, at least in most cases.

(4) The *dressing*. This is the final step in the operation, which I endeavor to make as antiseptic as possible. The vagina should be thoroughly cleansed from any remnants of clots. Pure iodoform is applied with a powder-blower, afterwards a quantity of antiseptic powder, consisting of equal parts of subnitrate of bismuth, iodoform, and tannin, is thrown in. A quantity of iodoform wool or charpie is placed against the perineum. Pads of sublimated cheese-cloth are applied and secured by proper bandage, and the patient is put to bed. The urine must be passed through a catheter.

I have performed this operation, or some modification of it, twelve times in all, and have always secured immediate union, and, with only two exceptions, without rise of temperature of more than one degree. In each of these cases the temperature reached 101° the second day after the operation, but came down to normal the next day, and remained thus.

What I suppose to be the novel and original features of this operation are: (1) the bifurcated form of the denuded surface at its inner end; and (2) the use of the buried suture for approximating the deep surfaces of the wound. The buried suture I have employed only during the last year, but the bifurcate form of denudation I adopted several years ago.

As to the results of this operation, I find that it accomplishes what it is designed to do. The cervix, being caught in the pouch formed between the cornua, is held high up, so that the fundus is tilted forward. By this means the two chief causes to which failure in other forms of colporrhaphy is due are eliminated; namely, the wedge action of the uterus in dilating the vaginal canal, and the forcing outward of the vaginal wall from the weight of the pelvic organs, the last-named difficulty being obviated by the forward position of the uterus. I find, also, that the disposition to prolapse of the vaginal walls is greatly lessened by the peculiar result obtained through the use of the buried suture. As will be readily seen, the approximation of the sides of the wound by the buried suture has the effect to produce a thick fold of tissue in the recto-vaginal septum. This fold projects into the rectal space and forms a thick and strong pillar of tissue, forked at its upper extremity. In this fork the cervix uteri rests, and is held backward, thus tilting the fundus forward. I can hardly see what more could be desired in an operation of this sort.

The value of this operation in cases requiring it can hardly be over-estimated. In the cases in which it is the most essential the condition of the vagina is usually such that pessaries, with the exception of those having an external support, are of no avail, unless, indeed, we except the inflated ball-pessary, which only gives temporary relief at the expense of ultimately creating a condition still more deplorable. Indeed, the patients upon whom I have performed this operation have, almost without exception, been those who had abandoned pessaries of every description, after having tried everything in this line their medical advisers could suggest, and their uniform testimony has been that their condition had been in the end aggravated by pessaries, instead of being helped.

I do not wish to be understood as claiming that every case of procidentia, rectocele, or subinvolution of the vagina can be radically and permanently cured by this operation alone, but I consider this operation as a fundamental procedure for the proper treatment of these cases. Cases of retroversion and procidentia require Alexander's operation. Cases of extreme anteversion connected with protrusion of the vaginal walls may be relieved by the same means. In sixty cases of Alexander's operation I have found this procedure of exceedingly great service as supplementary to the operation for shortening the round ligaments, and consider it a necessary procedure to insure success in this operation in cases where there is great laxity of the vaginal walls.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

THE EFFECT OF OCCUPATION ON THE SKELETON.

MR. W. ARBUTHNOT LANE[1] has added to his studies in this line that of the body of a shoemaker, which is extremely curious. It would be beyond our limits to follow him in detail, and much of the paper is necessarily so technical that we fear few readers would follow us if we did. That occupation does have an effect on structure is at first sight a truism, but when we come to study *how* it acts the question becomes a very important one. We see, on the one hand, purely mechanical changes, such as the distortion produced by excessive pressure; and, on the other, distinctly vital changes, showing the tendency of the organism to adapt itself to new conditions. The front of the chest of this shoemaker is a striking illustration of both of these processes. The lower part of the sternum was very deeply pressed in. The lower end of the body of the sternum, where the ensiform cartilage (turned to bone) joined it at an angle, was only one inch and a half from the spinal column when the body was lying on the back, and but half that distance from it when placed in the sitting position. Here is the mechanical process; now for the compensation: "The anterior surface of the gladiolus, and especially of its lower half, was covered by *a thick layer of dense fibrous tissue*. This was evidently produced by the blending of the *enormously hypertrophied*

[1] The Anatomy and Physiology of the Shoemaker. Journal of Anat. and Phys., Vol. XXII, July, 1888.

anterior chondro-sternal ligaments with those immediately adjacent on the same side, and with their fellows across the middle line." The joint between the manubrum and the gladiolus was much strengthened by a strong anterior ligament, which became very tense during pressure on the gladiolus. "The strain sustained by the first costal cartilages resulted in their very complete ossification, and, though it was necessary that some joint should develop in the rigid cartilage, yet this joint was placed very obliquely, its outline was remarkably irregular, and the movement permitted in it very limited." With regard to the ossification of the costal cartilage, we must remark that, useful as it may have been, it perhaps needs no explanation beyond the age of the individual, which was seventy-three. It is evident that the respiration with such a thorax must have been chiefly abdominal, and, in fact, "the proportion which is normally borne by the muscular and tendinous constituents of the diaphragm to one another was materially altered in this subject. The muscular portion was remarkably thick, and encroached very considerably upon the area which is normally tendinous. Thick bundles of muscle-fibre projected prominently from the under surface of the muscular layer."

As we have said, we cannot go into the many interesting points in this paper. We have written this much chiefly to show the scope and character of the investigations Mr. Lane has engaged in.

We shall now allude to a supposed law concerning which, we must confess, we have some doubts, though these concern Mr. Lane's application of it even more than the law itself:

"It is that, in proportion as a muscle is exposed habitually to a constant and considerable strain, in the same proportion do its muscular fibres tend to retrocede to tendon, and the bony surfaces into which it is inserted tend to grow in the direction of the traction which the muscle exerts upon them." The use of the word "strain" is ambiguous. If it means that a certain muscle frequently and suddenly put on the stretch *by the action of other muscles* tends to become fibrous, we are inclined to accept it; but it appears from Mr. Lane's application of the law that it is to apply to a muscle producing the strain by its own contraction, and this we are not prepared to admit. He shows in illustration of this law, or rather, of his interpretation of it, the shoemaker's scapula, which is broad and irregular in the posterior border, besides presenting a broadened spine; the former of these characters he traces to the action of the rhomboids, and the latter to that of the trapezius, both of which muscles come into play in drawing the thread. He contrasts this scapula with one from a laborer who had apparently carried loads on his right shoulder, in which, beside other peculiarities, the superior angle, along the back of which the levator anguli scapulæ is inserted, is prolonged upward. Mr. Lane intimates that he shall return to this subject. We hope he will, for it is one of great interest. We by no means always agree with Mr. Lane, but we give this fragmentary report that the readers of the JOURNAL may have, at least, a general idea of the nature of his investigations.

THE RECONSTRUCTION OF THE SKELETON FROM THE LONG BONES.

Dr. John Beddoe[2] read a very valuable paper on this subject last winter. He approached the question from the anthropological side, but it evidently has also important medico-legal bearings. Dr. Beddoe, in certain investigations, had used Humphry's formula as follows: multiply the length of the femur by 4, subtract $\frac{1}{11}$ of the product, and add for the soft parts, according to Topinard, 35 mm. (1.4 in.); but he points out that it is unsatisfactory, owing to the different proportional length of the legs in persons of low and high stature. Further, the length of the legs in tall men appears to depend on a greater relative length of the tibia. He mentions, also, two methods given by Thurman. The former, which is pretty accurate for persons of about middle height, consists in striking off one inch from the length of the femur, together with half of any excess there may be over eighteen inches, and then multiplying by 4. The other is to add one inch to twice the combined length of the femur and tibia. Beddoe states that this gives too small a result for low statures, but is otherwise fairly correct. We would say in reply to this that the relative height of the trochanter and the top of the symphysis varies with the breadth and with the inclination of the pelvis.

Dr. Beddoe proposes the following plan, which, the reader will perceive, depends on a sliding scale and differs according to sex. To obtain the height of the male, *including the soft parts*, "take away from the length of the femur one-quarter of the excess over 13 in. up to 19, and thereafter only one-eighth, and then multiply by 4." He then gives the algebraic formula and continues: "Thus, more simply, add to thrice the length of the femur in inches 13 in. and one-half of any excess over 19 in. In women, for 13 and 19 read 12.5 and 17.5; or, on the metric system, add to thrice the length of the femur 33 cm., together with one-half of the excess over 48 cm. In women, read 32 and 44 or 44.5. The reason for making these allowances in the case of women is as follows: though the average proportion borne by the lower extremities to the stature is, if anything, rather smaller in women than in men, yet, as the middle stature in the former corresponds to a low stature in the latter, it seems probable that the height about which women pass from dwarfish to average proportions of trunk and limbs must be somewhat lower than in the case of men."

Topinard,[3] in a recent article, reviews Beddoe's paper, and, having somewhat modified his previous figures, gives his method of obtaining the height by the proportions. He objects to the plan above given that it seems complicated, as the reason for the figures are not at once evident. He himself neglects the different proportions of individuals of different stature, believing them due to too small series of observations and too great discrepancy of conditions in the subjects. We do not think him justified in this view, but time will show. His present mean proportions are the following: the height being 100, the length of the humerus is 20, that of the radius 14.3, that of the femur 27.3, and that of the tibia 22.1. Thus, if we have any of these bones, it is easy by a simple formula to work out the height of the skeleton, to which Topinard adds 35 mm. to get the height in the flesh.

THE RELATIONS OF THE CEREBRAL ARTERIES TO BONY CANALS.[4]

Professor Rüdinger has written an interesting paper

[2] Journal of the Anthropological Institute of Great Britain and Ireland, February, 1888.

[3] Revue d'Anthropologie, Juillet, 1888.

[4] Archiv. für Anat. und Physiol. Anat. Abtheil., 1888.

on the relations of the internal carotid in the temporal bone and in the cavernous sinus, and on the vertebral artery in the foramina of the transverse processes. He shows that the carotid is far from filling the canal, and that the walls of the vessel are not united with the periosteum lining the latter. He points out that such an arrangement would be far from desirable, as it would necessarily abolish the pulsatory movements of the artery. That it could not dilate if it filled the canal is self-evident, and even if its connections were loose enough to allow contraction, what would fill the resulting void around the vessel? Rüdinger finds that the vessel is surrounded by a rich plexus of veins, an arrangement admirably adapted to compensate for its varying size. The size of the artery he finds much smaller than that of the canal. The diameter of the latter varies from 5 mm. to 7 mm., that of the artery from 3 mm. to 4.3 mm.; thus there is a considerable space to be filled by the veins. The artery in the sinus cavernosus is in contact neither with the bone nor the dura, though situated at one side of the cavity. It has already been shown that in the fœtus the sinus cavernosus is essentially a venous plexus. There is not much to say about the relations of the vertebral arteries in the transverse foramina. It was well known before that they do not fill the foramina, and that at least one vertebral vein accompanies them. Rüdinger shows that they are surrounded by a network of veins. The paper is beautifully illustrated.

THE ESCAPE SYSTEMS OF THE RENAL VEINS.

Dr. Lejars [5] has studied on some eighty subjects the arrangements by which the blood can escape from the kidney in cases of closure of the inferior cava, or in the very common cases of its engorgement. As he well says: "Even under physiological conditions the blood in the renal veins must be arrested, though but for an instant, just before the systole, when there is a wave backward from the heart, and this obstacle must be exaggerated in tricuspid lesions and hypertrophy of the right side of the heart." In some animals, as the horse, sheep and rabbit, valves guard the mouths of the renal veins. MacDonnell some thirty years ago claimed that this valve occasionally exists in man. Dr. Lejars has not found it. "Two or three times only the angle at the junction of the renal veins with the cava, which is always a well-marked spur, was raised into a slight lid, (*opercule*) but very thin and incomplete, quite unfit to do the work of a valve.

The want of protection by valves is made up for by anastomoses of the renal veins and other "escapes" which Dr. Legars has studied very thoroughly. He finds that these safety arrangements may be divided into three classes. First, emerging veins which leave the kidney at other places than the hilus, and empty into neighboring trunks. Lejars found them only six times in eighty subjects. They run either into the cava, the lumbar veins, or the spermatic plexus. Second, the veins of the capsule which communicate with parietal and diaphragmatic veins, with those of the portal systems, especially those of the meso-colon, with the veins of the ureter, and with the spermatic or ovarian veins. These communications are usually small, but become developed under favorable circumstances. Third, and chiefly, a venous canal, which Lejars names the reno-azygo-lumbar. He found it sixty-two times in seventy subjects, but, curiously enough, only six times on the right. The following description, applies, therefore, solely to the left. A branch leaves the lower and posterior border of the renal vein, crosses the aorta, and divides into two. The lower branch runs downwards into a lumbar vein in which it ends, with a dilatation which is often very large even in the child. The ascending branch, usually the larger of the two, keeps close to the vertebræ going under the psoas. It ascends by the heads of the tenth, ninth and eighth ribs, and then, turning forward, ends in the lesser azygos. It communicates by a large branch with the spinal plexus.

[5] Bulletins de la Société Anatomique de Paris, Mars., 1888.

THE DISTRIBUTION OF THE CUTANEOUS NERVES ON THE DORSUM OF THE HAND.

In our last report we alluded to the well-known difficulty of reconciling the clinical phenomena following the section of nerves with the standard anatomical descriptions of their distribution. Hartmann, whose work we quoted, attempted to account for the discrepancy by anastomoses of nerves, and by the occasional transference of bundles of fibres from the nerve trunk to which they properly belong to another. We are inclined to consider this view a good one, but it does not follow that there is no other explanation. Dr. H. St. John Brooks read a paper on the nerves of the back of the hand before the Section of Anatomy and Physiology at the January meeting of the Royal Academy of Ireland.[6] He removed the skin from the back of the hand, and dissected the nerves under water. He found that there is a tendency on the part of the nerves to encroach on their neighbors' territory. In one case the radial and ulnar nerves overlapped on three fingers and a part of the dorsum. The amount of overlapping varies considerably. This accounts very simply for the occurrence of areas of diminished sensibility beside those in which sensation is wholly lost.

With regard to the share the palmar nerves are supposed to take in supplying the dorsal surface of the ends of the fingers, Dr. Brooks found that the dorsal nerves extend, in the case of the thumb and little finger, as far as the nails, in the index and ring finger as far as the second inter-phalangeal joint, and in the middle finger as far as the first one. Dr. Brooks mentions some cases of paralysis which may be accounted for by the double nerve supply. Thus, after section of the ulnar nerve, not only was sensation lost over the little finger, one-half the ring-finger, and a corresponding part of the back of the hand, but it was clearly lessened over the dorsum as far as the back of the index.

As we have already implied these observations throw no discredit on the theory of anastomoses of nerves, except that it does not account for everything. The two explanations rest on undoubtedly correct observations. Recently M. Killar [7] has read a paper on anastomoses of nerves of the upper extremity, which, no doubt, are much more frequent than is generally believed. He treats of, first, the arrangement of the musculo-cutaneous and the median in the arm, second, anastomoses of the median and ulnar in the arm and forearm, and third, the anastomoses of the radial and ulnar in the arm. The details of the paper are too technical to be of interest to most of the readers of

[6] Dublin Journal of Medical Science, July, 1888. The paper is published in full in the Internationale Monatschrift für Anatomie und Physiologie. Band V, Heft. 8.

[7] Bulletins de la Société Anatomique de Paris. Juin., 1888.

the JOURNAL. In the discussion that followed, Hartmann restated the main fact very neatly: The origin of the nerve from the spinal cord is constant, the end is constant, but the course of the fibres between these points varies. We are inclined to question whether it is really established by a sufficient number of observations that the origin from the cord is always the same.

THE POSITION OF THE FEMALE PELVIC ORGANS.[8]

Professor Karl Bardeleben read a most valuable paper on this subject at the recent meeting of the *Anatomische Gesellschaft*. He had apparently been appointed to study the question and to make a report that should be authoritative. He has presented a very full review of the literature of the subject, and has given his own views, determined by study of the living as well as of the dead body. It would be absurd to hope that all questions in dispute had been set at rest, and, of course, Professor Bardeleben is not infallible, but we think that his account may be accepted as the standard description of these very important relations.

First. The uterus is normally inclined forward when the bladder is empty or nearly so. Besides this anteversion in children and virgins there is also some anteflexion. With greater distension of the bladder the uterus is pressed upward and backward and at the same time straightened, so that under normal circumstances it may lie behind the axis of the pelvis. The uterus is usually placed unevenly, being more frequently turned to the right. The cause is the distension of the rectum and the sigmoid flexure. The *os externum* is touched by a straight line which runs from the upper border of the symphysis to the lower end of the sacrum. Bardeleben then discusses the causes that determine the anteversion of the uterus. We pass over those depending on development and some alleged ones from comparative anatomy, to consider the mechanical ones. These are the intra-abdominal pressure, the influence of the ligaments, especially the round ligaments, but chiefly the peritoneum which is firmly attached to the fundus, and opposing stretching by means of its unstriped muscular fibres, holds the uterus closely applied to the bladder. Besides this, when the body is in the upright position the weight of the uterus comes into play, tending to turn it forward on a transverse axis.

Second. Our author finds the female bladder of the most varied forms and does not describe any one as particularly characteristic, but points out that the uterus makes an asymmetrical impression which can be seen on the separated bladder when inflated.

Third. The connection between the bladder and the cervix is of variable extent, ranging in the middle line from a few millimetres to two centimeters. It consists of loose connective tissue. Far from being one of the causes of the anteversion of the uterus, it to some extent hinders the swinging back of the cervix and the swinging forward of the fundus. The point that the bladder and cervix are attached by *loose* connective tissue is an important one as it would appear to permit some movement between the two viscera. The statement was made by Rokitansky in 1859, and by Kohlrausch in 1854, but appears to have been disputed.

Fourth. The remarks on the rectum do not call for repetition, but our author dwells on the effect of the sigmoid flexure when enlarged. "It hangs frequently in a long loop filled with fæces from the edge of the left psoas down into the upper and posterior part of the true pelvis, forcing the uterus and directly or indirectly the left ovary to the right. The bladder then extends more to the left."

Fifth. With regard to the ovaries the statements are not quite so clear. The author accepts the views of Schultze, His and Waldeyer. The ovaries lie at the sides of the pelvis with their flattened surfaces looking in and out, the long axis vertical, the free border behind and the hilus in front.

Sixth. The Fallopian tubes run outwards from the uterus, then backwards in an arch over and around the ovary. Bardeleben calls particular attention to a kind of peritoneal pouch in this region.

[It is evident that displacements of the uterus must effect both the tube and the ovary, the latter most directly through the ligament of the ovary. Further, it is apparent that in its normal condition the ovary presents the least possible surface to pressure from above, but let it be drawn from its place of shelter and it is hard to say theoretically where it may not ultimately be forced.]

Seventh. The author follows Holl concerning the course of the ureters, but we have failed to find the reference. Professor Bardeleben mentions that when he was preparing this paper he had the opportunity of making examinations of living women which he justly considers most valuable. Almost all the contents of the pelvis can be felt by combined internal and external manipulation. The ovaries can be felt, the amount of fluid in the bladder very accurately estimated, the psoas major, pyriformis, obturator internus, and (when contracted) the levator ani made out. The finger in the vagina can be met not only through the abdominal walls but through the sacro-sciatic notch, though not in all cases. He does not refer particularly to what can be felt from the rectum though we imagine he must have used it as well as the vagina.

In this connection we may mention that Dr. Weiss[9] has compared the perineum of white and black women and found that in the latter the vulva is situated further back than in the former.

[8] Anatomischer Anzeiger, July 28, 1888.

[9] Revista de Ciencias Medicas. Havana. Abstract in the Lancet, Vol. I, 1888, No. 18.

Clinical Memorandum.

SPONTANEOUS FRACTURE OF A RIB.

BY SAMUEL A. FISK, A.M., M.D., DENVER, COL.,
President Colorado State Medical Society.

MR. X, thirty-two years of age, was sitting after luncheon sideways on his chair, with his legs crossed, and with his right arm over, and his hands clasped on the back of the chair, when, on giving a sudden violent cough, he heard something snap, and felt a sharp, piercing pain in his side. He was put to bed, and an examination revealed a transverse fracture of the tenth rib on the right side, situated about one-third of its length from the spine. There could be no doubt of the existence of a fracture, for the ends of the bones could be felt grating over each other, and the patient could feel the same himself on taking a deep inspiration, or on motion.

In speaking of spontaneous fractures of the ribs the writers quote the eight cases cited by Malgaigne, all of which were on the left side and produced by muscular action; and the six additional cases collected by M. Pantel, where the fractures were on the right side. Three of these latter were caused by coughing.

"It is believed, however, that in all of these cases," says Hamilton, "the ribs had previously become atrophied, and perhaps undergone other changes in their structure, rendering them liable to fracture from the action of trivial causes."

Of Malgaigne's cases, five were in people between forty-seven and sixty-three years of age, and one in a young man.

It seems difficult to believe that, in the present case there could have been any atrophic wasting of the rib which would render it liable to fracture. The patient is a young man, vigorous and active. To be sure he has had serious lung trouble, for which he came to Colorado. For the past five years he has been the subject of diabetes insipidus, voiding some twelve quarts of urine per day; and in the same time he has had two severe attacks of acute inflammatory rheumatism. He is, nevertheless, in good flesh, actively engaged in his life's work, and is, to all appearances, in perfect health. It seems more reasonable to attribute the fracture to a sudden violent muscular strain put upon a rib which was fixed by the tension of the muscles of the back, from the position in which the patient was sitting, than to attribute it to any atrophic wasting or change in structure.

For the first twenty-four hours the pain was intense whenever the patient moved or coughed, but as the ends of the bones softened the pain diminished, and the greatest inconvenience came from the flannel bandage which he had to wear, and which was kept on day and night. This bandage was worn two weeks, the patient all the time going about his work. With this exception the treatment was *nil*, although more pain was probably experienced from the fracture of this rib than would have resulted from that of any other, because it received no support from the adjacent ribs, and so had freer play. The case is more curious and rare than instructive, and it is simply for this reason that I record it.

Reports of Societies.

AMERICAN NEUROLOGICAL ASSOCIATION.

FOURTEENTH ANNUAL MEETING.

FIRST DAY, TUESDAY, SEPTEMBER 18, 1888.
MORNING SESSION.

THE President, DR. JAMES J. PUTMAN, of Boston, called the Association to order, and made an address. He said that the time had come when neurologists could look to one another for support in their work and, although he had no definite plan of co-operation to offer, still, co-operation in some form had incontestable advantages. It might be possible to use one another's plans in hospital work, in arranging facts, and in verifying and testing the work of others. Thus scanty observations might be combined in pathology and therapeutics, to increase our knowledge, and this thought might relieve the drudgery of much of our daily work. He suggested a uniform system of case-taking for some of the commoner affections. The more as statistical facts could be secured only by collaboration. Co-operation is not a new thing, for the British Medical Association, and the New York Therapeutical Society have tried it, and other societies have recommended it. Individual work may be better, unless with great leaders like Charcot who have apt pupils to follow them, and there is more vitality where only a few are interested. Still, co-operation may be of service, and the Association can aid the individual by money and by moral support. Thus, if a member wishes to investigate a subject he can notify the Association, which can, if it sees fit, appoint others to aid him. Among subjects suggested were heredity in nervous disease, the degeneration, regeneration, and transformation of types of disease, the action of iodide in non-specific brain tumors, racial peculiarities in neuroses, cranial measurements, etc. He, himself, had been much interested in the question of lead as a causal factor in disease. In patients with nervous disease lead was present in the urine in a large percentage of the cases, while in healthy persons the percentage was very small; his data, however, were not large, and others could aid in the work. Another object worthy of attaining was to have a joint collection of specimens that could be lent or consulted in private laboratories.

DR. PHILIP COOMBS KNAPP, of Boston, then read a paper

ON NERVOUS AFFECTIONS FOLLOWING INJURY. ("CONCUSSION OF THE SPINE," "RAILWAY SPINE," AND "RAILWAY BRAIN").

DR. PUTNAM, said that in these cases an exact diagnosis was more important than elsewhere, not only for the patient, but for the corporations.

DR. E. C. SEGUIN, of New York, agreed with the reader's conclusions. There was a common ætiology, but the pathology was different, and each case should be studied separately. There were two great sources of error; first, that symptoms were often attributed to the accident which had existed before it; and second, that the patient has many subjective symptoms which are due to unintentional deception, and thus deceives the physician. Bernheim has shown that hypnotized patients can give themselves suggestions, and certain symptoms in these cases, but in only a minority of them, must be regarded as auto-suggestions, the result of a firm belief on the part of the patient. There was no doubt that hysterical symptoms might exist with organic disease, as the speaker had shown in a series of non-traumatic cases published in 1875. The reality of the neurasthenic state of which the writer spoke was undoubted, but it existed in many cases not the result of trauma. In railway cases the objective symptoms were few and far between.

DR. LANGDON CARTER GRAY, of New York, said that in these cases we have to demonstrate to a jury what we cannot demonstrate to ourselves. In many cases it is almost impossible to decide on which side to testify. When a patient is injured in a city the lawyers come down upon him and impress upon him the danger to which he has been subjected. This process continues, the case drags on, and the patient cannot afford to get well for fear of being sued for conspiracy. This causes a set of psychical irritations much greater than any hypnotic suggestions that are

employed in France. If cases are settled promptly, the neurasthenic states recover promptly, but, if not, they last because the patient cannot break the habit. Neurasthenic symptoms do not usually come on with organic disease; the contrast between the unstable nervous bearing of a patient in the neurasthenic state and the calm, quiet demeanor of a patient with severe organic disease is very great. It is a question whether the neurasthenic symptoms may not be the result of the attendant circumstances of the injury.

Dr. William Zenner, of Cincinnati, said that no class of cases was more difficult to decide upon, and the difficulty will persist until we know more about functional diseases. It is important to note that hysterical symptoms may be present in organic disease, and they are not uncommon in toxic affections, such as lead poisoning. Deception in regard to symptoms may be very considerable, even with actual disease, and it should not lead to a diagnosis of no disease. Actual malingering, except in prisons or in the army to escape temporary duties, is a very rare thing.

Dr. Putman said that hemianæsthesia was of value as showing that the patient was not a malingerer, as it was difficult to simulate it.

Dr. Knapp said that he had spoken of the neurasthenic state rather as an indication of the patient's condition than as a sequel of injury. In the cases reported there was as a rule, no question of damages, the patients were dependent on their own earnings and anxious to get back to work, and therefore there was little cause for deception.

Dr. Isaac Ott, of Easton, read

ON HEAT-CENTRES IN MAN.

Experiment had shown the existence of heat-centres in the lower animals, and the reader cited various cases to show that there were similar centres in man. Certain cases of injury to the cortex near the fissure of Rolando were reported where the temperature rose to 104 and where other causes of high temperature seemed to be absent. Other centres probably existed in the corpus striatum, the optic thalamus, the pons, and the medulla.

Dr. Hare, of Philadelphia, said that it was not correct to distroy a cell and say that its function is to cause high temperature; if the facts are true it is an inhibitory centre whose functions is to cause a fall of temperature.

Dr. Gray, of New York, asked if cerebral thermometry was of any assistance here. The normal variation in cerebral themometry was so great that there had to be a difference of at least three degrees before it could be looked upon as pathological. Why, with a lesion of one centre, should there be a rise of temperature on one side in some cases, and both sides in others? Why, with so many possible causes, should a rise to only 102° or 104° be regarded as due to a lesion of the centre; it might be so with a rise to 106° or 110°. Cases were also on record where these centres were involved and the temperature remained normal.

Dr. J. H. Lloyd, of Philadelphia, spoke of a case of meningeal tumor near the Rolandic centre with a subnormal temperature, and asked what that proved.

Dr. Ott said that it was not yet certain whether the centre was excito-motor or inhibitory. Irritation of an inhibitory centre would explain Dr. Lloyd's case.

Dr. E. D. Fisher, of New York, read a paper

ON A CLINICAL REPORT OF CASES OF EPILEPSY FOLLOWING CEREBRAL HEMIPLEGIA.

This paper was based on the report of a series of cases of cerebral infantile paralysis attended with convulsive attacks. The paralysis was usually spastic and the growth of the parts was involved. There was imbecility or idiocy and epilepsy. If the lesion be in the cortex, as is usually the case in children, it is attended with imbecility and convulsions; if it be lower down there are rarely if ever, convulsions. Idiopathic epilepsy may simulate the Jacksonian type. When the hemiplegia is congenital it is due to meningeal hæmorrhage with parencephalia; the acquired form is due to venous thrombosis (Gowers), or, in older children and after acute infectious diseases, to embolism. Hæmorrhage and polioencephalitis are rarer causes. The atrophy was slight, from disuse, and never so great as Knapp reports, not so great as in spinal infantile paralysis. There was often ataxia rather than loss of power, and other disturbances of motion from incomplete lesions of the pyramidal tract.

In most cases the average duration of life as given by Henoch, twenty years, was much exceeded. The nature, onset and course of the seizures was described. Loss of consciousness was the chief feature, and, even in the Jacksonian type, the consciousness was often involved. The intellect was less affected by the attacks, although the attacks were more like those of idiopathic epilepsy than like Jacksonian epilepsy. The writer agreed with Luciani that localization from convulsive seizures, without paralysis, must be approximate.

Dr. Knapp, of Boston, said that two years ago at a meeting of the Association, Dr. Sachs had called attention to the value of convulsions as a focal symptom distinguishing between lesions of the cortex and lesions lower down. A year later, in reporting a series of cases, the speaker had divided them in the same way. It seemed, however, a little uncertain whether the presence or absence of convulsions could be regarded as a focal symptom of absolute significance, and it would be extremely valuable to get autopsies of cases of intracerebral lesion where convulsions were present, if such could be found. In regard to atrophy he had seen and had reported with photographs and measurements, cases of cerebral infantile paralysis where there was greater atrophy than in most of the cases of spinal paralysis that came under his observation, and he was disposed to accept Quincke's hypothesis of a trophic centre in the cortex.

Dr. G. L. Walton, of Boston, said that convulsions, as rule, were focal. He mentioned a case where he saw the convulsion. The head went to the left, all the facial muscles twitched, but there was no loss of consciousness. There was some facial paralysis. An operation was under consideration, but the centre for movements of the head in man, were not accurately localized as yet.

The following new members were elected: Drs. Wm. Noyes, S. B. Lyon, and F. B. Peterson, of New York; Drs. H. R. Stedman, Morton Prince, and W. N. Bullard, of Boston; Drs. E. N. Brush and Wm. Osler, of Philadelphia; Dr. C. H. Hughes, of St. Louis; Dr. L. B. Baker, of Baldwinsville; and Dr. S. Ayres, of Pittsburgh.

FIRST DAY.— AFTERNOON SESSION.

DR. R. T. EDES, of Washington, read a paper opening a discussion on

THE RELATION OF RENAL DISEASES TO DISEASES OF THE NERVOUS SYSTEM.

The action of renal diseases upon the nervous system was the only portion of this subject considered. A close relation has long been observed, and the various symptoms have been regarded as uræmic, although they may better be divided into uræmic, urotoxic, and uroseptic; the latter division coming chiefly under the notice of the surgeon. In addition there are vascular symptoms, which may be divided into angioneurotic and angionothentic. Among the various nervous symptoms attributable to renal disease are headache, nervousness, convulsions, coma, paralysis, numb fingers, spontaneous gangrene, etc. Not all of these symptoms are urotoxic. Uræmia is due to the retention of something in the blood which is not eliminated, and possibly to new agents formed, perhaps ptomaines. As uræmic symptoms do not appear until eight or nine days after anuria is produced by artificial means, it is a question whether there may be a gradual accumulation of the urinary constituents. In nephritis there may be a diminished amount of urea, but our normal standard is too high. The amount varies from day to day and a single observation is of slight value. The culmination of symptoms is often called uræmia. Somnolence, insomnia, and other milder symptoms are common, but convulsions are much rarer. Death may come on very quietly, or in the classical manner with sopor and coma. Headache and a feeling of pressure are also common symptoms. The poison is slow in its action, and the milder symptoms last a number of days. These uræmic symptoms are noted toward the close of chronic Bright's disease, being then urotoxic; at other times they are seen when the urinary symptoms are slight. Sometimes the urinary products and the urine are diminished, at other times the symptoms come on suddenly, when there has been no change in the amount of urine. This also points to a slow accumulation of the poison, a slight brief oliguria acting as the final source of explosion. Various mild uræmic symptoms occur with a considerable flow of urine. Latent Bright's disease is the interstitial form, and not the form where the epithelium is degenerated. The forms of mental disturbance that are seen before there is much diminution in the elimination are not uræmic, the later delirium is urotoxic. The symptoms of a localized cerebral lesion, formerly termed "serous apoplexy" and now "uræmia" are not due to any actual lesion like a hæmorrhage or to uræmia, but to a serous effusion in any condition where the bloodvessels are enfeebled. Cerebral hæmorrhage is, of course, common in contracted kidney. The headache preceding it is not urotoxic, but is due to vascular disease either angioneurotic or angionothentic. Uræmia ought not to cause unilateral trouble, but œdema may. Cerebral œdema may exist without any symptoms, or it may cause hemiplegia, owing to the slight difference in the amount of œdema in the two sides, as has been noted at autopsies. This theory is corroborated by the existence of localized œdema elsewhere. Suppression of urine for a few hours preceding attacks of apoplexy are the result of the apoplexy and not the cause. The causes of the various nervous symptoms in renal disease are due to the complicated interaction of various causes:

(1) Degeneration of the blood, hydræmia, anæmia, etc.

(2) Poisoning of the blood, uræmia, ptomaines (?) etc.

(3) Disordered vaso-motor action, spasm, dilatation.

(4) Vascular degeneration, aneurism, etc.

A table was given showing the probable combination of these causes in producing the individual symptoms. In regard to treatment diaphoresis helps, but rather by its action on vascular tension than by the amount of water or urinary constituents it carries off. The same may be said of bleeding. In cases of high arterial tension nitro-glycerine and possibly the continued use of morphine may give relief.

DR. F. X. DERCUM, of Philadelphia, said that we cannot assume that the presence of urea in the system is not injurious. The slow onset of symptoms in artificially-produced anuria shows that other channels are active. The cause of uræmic symptoms is the retention of urinary constituents, although we cannot say which they are. Convulsions are often due to organic changes, such as œdema or vascular disease. In uræmia we may get focal symptoms without any gross lesion. In many cases the diagnosis was difficult, and œdema and hæmorrhage were hard to differentiate. In uræmia the temperature was usually low, but with convulsions there was usually some rise. He should try morphine.

DR. SEGUIN, of New York, said that nervous symptoms, headache, paræsthesia in the head, high arterial tension, etc., were not uncommon in the prealbuminuric stage of chronic Bright's disease. He spoke of a patient with typical migraine for some time, with later daily headache of the occipital form; here casts were constant, but albumen was seldom seen. Certain symptoms of pressure, confusion and semi-vertigo, due perhaps to high arterial tension, form the picture of cerebral hyperæmia. In paretic dementia the arterial tension is also high, and here there is almost always contracted kidney. In doubtful cases albuminuric retinitis or choked disc may enable us to decide between renal disease or brain tumor. It is hard to differentiate between angioneurotic and angionothentic conditions, as the two go hand in hand. In regard to treatment, he did not oppose morphine.

DR. GRAY, of New York, said that deviations from the type were the hardest to diagnosticate. He described several cases with anomalous symptoms where examination showed renal trouble. In uræmic headache there is at times a quasi-periodicity which suggests malaria, and the headache is often localized and characterless; quinine also relieves these headaches. In hæmiplegia in cases of coma the reflexes are often a valuable aid in diagnosis. In treatment one of the main things is to avoid any strain on the cutaneous vessels; the patient must be kept in bed for a long time, and then carefully guarded from changes in temperature when he gets up.

DR. DERCUM thought that the ophthalmoscope was often of negative value in diagnosis.

DR. ZENNER, of Cincinnati, said that it was hard to believe in the theory of a localized œdema in the cases of paralysis without any lesion. Might there not be the temporary plugging of a vessel?

DR. EDES, in conclusion, said that urea was clearly not the poison in uræmia, and it seldom had any in-

fluence except when injected in very large amounts. Very little urea was eliminated by diaphoretics. The "prealbuminuric" stage of Bright's disease does not precede the lesion, but the classical symptoms belong to a later stage. He did not advise the continued use of morphine in cases of high arterial tension, but merely suggested that its cautious use might sometimes be of benefit.

Dr. C. L. Dana, of New York, read a paper on

THE CORTICAL LOCALIZATION OF CUTANEOUS SENSATIONS.

The question was whether there was separate sensory centres, or whether the sensory centres were combined with motor centres. He reported four cases in his own practice, and had tabulated one hundred and thirty-three others. From these data he concluded that the situation of the sensory centres coincided with that of the motor centres, but that they were larger and more diffuse, and it required a deep and sudden lesion to affect them. A total decussation of the sensory nerves was probable. Cutaneous anæsthesia of cortical origin was local and incomplete; total anæsthesia was either functional or sub-cortical. The muscular sense was probably located in the inferior parietal lobule. These conclusions had no bearing on Munk's sensori motor views. The cases of lesion of the motor centres without sensory disturbance are growing rarer, and may be due to incomplete or slowly-developing lesions. In opposition to Ferrier's views of separate centres, eighteen cases of lesion of the hippocampus and gyrus fornicatus had been found without anæsthesia, and no anæsthesia had been noted in cases of tumor of the corpus callosum. The gyrus fornicatus very possibly contains the centre for smell, as it is very small in anosmic animals whose tactile sensibility is good.

Dr. C. K. Mills, of Philadelphia, thought that the reader's conclusions were not made out, and that his own cases were not conclusive. He adhered to Ferrier's views, and believed that there are probably sensory centres in the region back of the retro-central fissure, the precuneus, the limbic lobe, and the superior and inferior parietal lobules. It is impossible to get over the cases of lesion of the motor centres where there has been absolutely no loss of sensation. Moreover, cases of lesion of the gyrus fornicatus with anæsthesia have been reported, one of them by the speaker. Lesions of the median fissure were formerly overlooked. Furthermore, association fibres from the sensory centres probably go to the motor centres, and if these are injured it may give rise to sensory disturbance.

Dr. M. Allen Starr, of New York, said it was still an open question. Tracts which are made out in the fœtus cannot be detected in the adult. In the fœtal brain there are tracts going from the posterior portion of the internal capsule to the parietal and posterior central convolutions. Embryology favors Dr. Dana's views. No fibres in early fœtal life are found curving upwards toward the limbic lobe or the gyrus fornicatus, but all go to the convexity. Comparative anatomy is also important. Meynert has shown that in the gyrus fornicatus is probably the centre for smell. If not, why is it so large in osmic animals and so small in anosmic animals. In pathology, many of the cases are unsatisfactory. There are no cases to support Ferrier's hypothesis. Lesions of the gyrus fornicatus have not been overlooked, but have been carefully sought for. The corpus callosum is singularly free from disease. Lesions of the hippocampus are suspicious, because it lies on the crus, and the sensory tract in the crus can thus be easily involved. This would vitiate Ferrier's conclusions. We must also distinguish between irritative and destructive lesions. One of the most constant signal symptoms in cortical epilepsy is paræsthesia, which ought to show a connection between the sensory and motor centres. He believed, however, that the tactile area of each half of the body was represented on both sides of the brain, just as the eye was.

Dr. Seguin, of New York, favored the theory supported by Dr. Dana. The older experiments in extirpating motor centres also favored this view, as did the marked sensory aura as a signal symptom in cortical epilepsy. The results of removal of portion of the cortex in man will give valuable information. In a case of his own, where a tumor in the motor region was removed, the man has anæsthesia in the cheek and hand on the opposite side, which has been more marked since the operation.

Dr. Dana said that he started in with a bias in favor of Ferrier's views, but a study of the cases made him abandon them.

SECOND DAY.—WEDNESDAY, SEPTEMBER 19, 1888.

MORNING SESSION.

Dr. F. X. Dercum, of Philadelphia, read a paper on

A SUBCUTANEOUS CONNECTIVE TISSUE DYSTROPHY OF THE ARMS AND BACK, ASSOCIATED WITH SYMPTOMS RESEMBLING MYXŒDEMA.

The case was one of a woman of forty-five, who, without known cause, began to have pain in the arms, which was followed by the development of huge, pendulous masses, elastic, lobulated, and not pitting on pressure. This enlargement was subcutaneous, and had no connection with the muscles. There was some anæsthesia, and later attacks of pain, followed by the formation of nodulated swellings, which at times persisted. Harpooning showed mucous tissue, large fusiform cells, and a little fat. For two or three days the speech was a little thick. The skin was not involved, and the intellect was not impaired.

Dr. Mills, of Philadelphia, had seen similar swelling of the face, followed by sudden death.

Dr. W. A. Hammond, of New York, said that one or two of the essential features of myxœdema was lacking, the skin remaining unaffected, and there being no mental impairment. Myxœdema was unknown in this country until the speaker called attention to it. There is usually slowness of speech and of thought. The fingers are often clubbed, unlike Dr. Dercum's case. The thyroid did not seem to be involved. This case seemed a little analogous to those of enlargement of one half the body. If this were myxœdema we must revise our ideas of that disease.

Dr. Putnam, of Boston, said that transition cases were always of interest. He had seen a case where one arm was much enlarged. This case seemed pathologically the same as myxœdema, but clinically it was unlike it.

Dr. Dercum said that the fluid in the meshes of the subcutaneous tissue may have been lymph instead of a denser fluid. Neuritis and angiectasis were prom-

inent in the case. Mental impairment was not always seen in myxœdema, and the thyroid was often wanting — a point difficult to determine during life, especially with a stout person.

DR. G. W. JACOBY, of New York, read a paper on

SUBACUTE PROGRESSIVE POLYMYOSITIS.

The patient was a man of thirty-five, who, two and a-half years before began to have pain, tension and tenderness in various muscles. Incisions were made, thinking it cellulitis, but no pus was found. The muscles were swollen, hard and tender, but the nerves were not tender. There was no mechanical irritability, no fibrillary twitching, and no RD. The knee-jerks were much diminished. Portions of muscle were excised, and showed very small fibres, an increase in the perimysium externum, with new connective tissue myxomatous or fibrous. There were some fat globules in the perimysium externum, with a little waxy degeneration of the connective tissue. The muscular fibres were not much involved. The writer thought there was a relation between this and the primary myopathies.

DR. B. SACHS, of New York, read a paper, opening the discussion, on

MUSCULAR DYSTROPHIES.

The writer defined the dystrophies as muscular washing with or without pseudo-hypertrophy, and without nervous change. The history of the different theories was reviewed. Progressive muscular atrophy of the Aran-Duchenne type was a spinal affection. Pseudo-hypertrophic muscular paralysis was also attended with atrophy, but was unquestionably not of spinal origin. Erb's juvenile form was not identical with pseudo-hypertrophy. The distribution of the atrophy ought not to be made a distinguishing factor; therefore the writer did not believe that Leyden's hereditary form or Landouzy and Dejenne's form should be regarded as special types. In the primary myopathies there was progressive washing with hypertrophy, no fibrillary contractions, no RD, and no changes in the spinal cord. Charcot and Marie's peroneal type had RD and fibrillary contractions, and was therefore regarded as a variety of progressive muscular atrophy, type Aran-Duchenne, of spinal origin. Mixed forms of primary myopathies also existed. In the histology of the dystrophies the only distinguishing point was the hypertrophy of fibres which was not found in the spinal forms. The results of harpooning were misleading. Hitzig believed that in Erb's form the changes in the fibre were primary, but that in pseudo-hypertrophy the changes in the connective tissue were primary. The following conclusions were reached:

(1) Progressive muscular atrophy, type Aran-Duchenne, is of spinal origin, and Charcot and Marie's peroneal type is similar to it, thus affording a hand and leg type.

(2) Pseudo-hypertrophy is not of spinal origin, the lipomatosis being incidental.

(3) Pseudo-hypertrophy is related to Erb's type, but is not identical with it. They differ in distribution and history. There are no fibrillary contractions or RD in either. Lipomatosis is sometimes present.

(4) All forms may show heredity.

(5) Landouzy and Dejenne's type is identical with Erb's.

(6) Pseudo-hypertrophy and Erb's form are the two representative types of dystrophy.

(7) The primary myopathics are distinguished from the spinal forms by the cardinal symptoms, absence of fibrillary contractions and RD, and presence of true or false hypertrophy.

The following classifications were suggested:

(1) Progressive spinal amyotrophy; (*a*) arm type (Aran-Duchenne); (*b*) leg type (Charcot-Marie, Tooth).

(2) Progressive primary dystrophy; (*a*) pseudo-hypertrophy; (*b*) Erb's type.

DR. KNAPP, of Boston, agreed with the reader's conclusions. Pseudo-hypertrophy and Erb's type were distinct chemically, but histologically they were alike. The primary myopathies differed histologically from the secondary spinal forms only by the presence of hypertrophied fibres. Clinically, the distinction must be made by the absence of fibrillary contractions and RD. Histologically he believed that in both forms of dystrophy the process began by atrophy of the muscular fibre, and that the changes in the connective tissue, the lipomatosis, etc., were secondary. He saw no reason to regard it as an inflammatory process.

DR. JACOBY questioned the propriety of a distinct division into types, for there are many mixed forms which could not be differentiated. It seemed fallacious to make the presence of hypertrophied fibres the sole test, for primary forms were reported without hypertrophied fibres. Acute inflammatory changes may give rise to changes like those in the myopathies, so that it seems plausible to regard part of the cases at least as inflammatory. That is the only hypothesis by which we can explain the reported recoveries from pseudo-hypertrophy.

DR. GRAY, of New York, thought pseudo-hypertrophy probably peripheral, but there were cases where there was legitimate reason for doubt. In other forms we cannot be certain whether they are peripheral or central, as he did not regard fibrillary contractions and RD as distinguishing symptoms.

DR. W. A. HAMMOND, of New York, objected to certain criticisms made on his work by Dr. Sachs. The statements in the last edition of his book were up to date, and certain cases of pseudo-hypertrophy, like Barth's could not be explained away. We cannot yet say what we believe. The harpoon is certainly of great value.

DR. WALKER, of Boston, spoke of a case of the peroneal type which he believed to be a primary myopathy.

DR. PUTNAM, of Boston, showed specimens from a case of hereditary dystrophy.

DR. SACHS thought we ought to bring some order out of chaos, and regarded fibrillary contractions and RD as extremely important. It was better, however, not to set up too many types.

Dr. David Inglis, of Detroit, was elected to membership.

— *Young Doctor.* Busy? I should say so! There never was any one more pressed for time than I.

Old Doctor. Oh, yes, there was; he is at the museum.

Young Doctor. Who is he?

Old Doctor. An Egyptian mummy. — *Chicago Medical Journal.*

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

SECOND annual meeting, held at Willard's Hotel, Washington, September 18th, 19th and 20th.

DR. EDWARD L. KEYES, President.

DR. ROSWELL PARK, of Buffalo, read a paper on

PYÆMIA AS A DIRECT SEQUEL OF GONORRHŒA.

The history of a case admitted to the hospital in 1882 was given, that of a man who about a month previous, had contracted gonorrhœa of ordinary severity, the discharge ceasing after about two weeks. A few days afterward one knee swelled and his physician treated him for gonorrhœal rheumatism. When the patient entered the hospital both knees were swollen, one to such an extent that it was tapped, and cloudy serum escaped. The patient's condition was typhoidal, evidently due to sepsis, and after some days death ensued. The autopsy revealed a collection of pus and erosion of bone at the sterno-clavicular articulation, pus in several other joints, enlarged mesenteric glands, etc.

Pyæmia as a direct sequel of gonorrhœa was extremely rare. That it could be caused by the gonococcus had not been proven. The author had made many cultures of discharges from the urethra of persons who had a slight gleet on up to a severe gonorrhœa, and in every case had found the bacteria of sepsis. These he thought might easily have caused the pyæmia in his case, but the wonder was that more patients did not become infected.

DR. BRYSON, of St. Louis, thought it was important to know whether this was the patient's first gonorrhœal attack. If he had had a previous discharge which had been lit up by sexual or other excess, the case would not be unusual.

DR. PARK could not say whether it was the first attack.

CLINICAL OBSERVATIONS ON GONORRHŒA, WITH SPECIAL REFERENCE TO ETIOLOGY, DURATION AND TREATMENT,

by DRS. JOHN P. BRYSON and EDWIN C. BURNETT, of St. Louis.

The observations were based upon 1394 cases of urethritis in the male. The difficulty of making cultures of the gonococcus, and the impossibility almost of getting human subjects to resort to experiments upon themselves, rendered accurate clinical observation very desirable. The more widely their observation had extended and the more accurate it had been, the more thoroughly they seemed to accord with the doctrine of the special nature of gonorrhœa. The whole clinical course of a gonorrhœal urethritis differed from that of a simple inflammation of the urethra. Several cases had convinced them of the justice of the claim of a period of incubation. The gonococcus had been present in large numbers in cases which had run a course of high inflammation; no case in which it had not been found had shown a high state of inflammation. The average duration of the gonorrhœa had been from six to eight weeks. All appearance of a urethral discharge might be absent for some time, and yet some excess or irritating cause light up the inflammation in a severe degree; it was, then, difficult to say when a positive cure had been effected. A large number of cases became chronic, and the disease might continue even eight or sixteen years. Local parasiticides had been of little benefit, at least not until the third stage, when the most effective had been astringents; balsam of copaiba and oil of sandal wood administered internally, perhaps also acted as germicides.

DR. CHISMORE mentioned the case of a doctor who had not had a gonorrhœa for fifteen years, yet the passage of a clean sound was followed five hours afterward by a creamy discharge which disappeared without treatment after twelve hours, yet it contained the gonococcus in large numbers.

DR. R. W. TAYLOR warned against basing a diagnosis of true gonorrhœa on the presence of the gonococcus.

The PRESIDENT thought the continued absence of the gonococcus from the discharge was evidence of a simple urethritis, but the presence of the germ did not determine the certainty of a gonorrhœa.

DR. E. R. PALMER, of Louisville, then read a paper on

RETROJECTIONS IN GONORRHŒA.

The observations of Drs. Brewer, Halsted, Curtis, Wily, and others, on the marked value of retrojections of hot water, weak solutions of bichloride of mercury, etc., were discussed, and the author's own results in recent cases were given. He had found that, notwithstanding several physicians had claimed that gonorrhœa could commouly be cured by such irrigations in from perhaps seven to eighteen days, the majority of cases would continue five or six weeks. An apparent cure might take place after a few days, but the discharge was likely to recur. He had found better results from additional local treatment with salicylic acid or boric acid.

Those who discussed the paper had failed, as the author had done, to cut short the gonorrhœal attack in the length of time claimed by the more enthusiastic advocates of free irrigation.

THE USE OF NITRATE OF SILVER IN THE LOCAL TREATMENT OF CHRONIC URETHRAL DISCHARGES.

DR. F. R. STURGIS, of New York, read the paper, the first part of which was devoted to a description of the appearances seen through the endoscope in these cases, by the aid of which instrument of a modified form he had been able to make local applications of nitrate of silver with much satisfaction.

The treatment by nitrate of silver, as was well known, was not new. But hitherto he had found the objection to it to consist in pain and unpleasant results following contact with other than the diseased part. He was now able to make the applications and limit them with great exactitude. Strong solutions could be employed, even sixty grains of nitrate of silver to an ounce of water.

A paper entitled

THE DIAGNOSIS AND TREATMENT OF CHRONIC URETHRITIS, WITH DEMONSTRATIONS OF INSTRUMENTS,

was sent by DR. OBERLÄNDER, of Dresden, Germany.

The endoscope was described, and by its use every change in the mucous membrane of the urethra became manifest. The different degrees of inflammation with the accompanying changes in the lining

membrane of the canal were pointed out. Papillomata were not as uncommon as usually supposed. As a rule he preferred dilatation to all cutting operations in stricture. He had discarded local applications of galvano-cautery and sulphate of copper. Solutions of nitrate of silver had been useful.

The President, DR. TAYLOR, and others present thought the value of the endoscope was somewhat overrated.

FIRST DAY. — AFTERNOON SESSION.

DR. SAMUEL W. GROSS, of Philadelphia, read a paper on

THE CONNECTION BETWEEN MASTURBATION AND STRICTURE OF THE URETHRA.

Tables of cases which had come under his observation in addition to those which he first published in 1877, were read. In all there were about 331 cases of masturbators whose urethræ were examined with the result of finding one or more coaptations in eighty-eight per cent. The examinations were made upon patients who had never had gonorrhœa nor injury to the perineum. As a rule, the stricture was of large calibre, single, and situated near the orifice.

DR. R. F. WEIR admitted the frequency of coarctations in the urethræ of masturbators, but he did not think the conclusion was justified that the masturbating habit was a common cause of the stricture. Strictures of large calibre were found even in the urethræ of babies, and in the newly born. He regarded these urethræ as normal.

DR. CABOT, of Boston, did not regard the diagnosis of stricture as opposed to spasmodic contraction as settled without the administration of ether.

MR. REGINALD HARRISON, of Liverpool, had not heard the paper read, but stated that he had not been able to satisfy his mind that masturbation led to any permanent contractures of the urethra such a we knew under the term organic stricture.

DR. GROSS directed attention to the extreme sensibility of the urethra to the passage of instruments in masturbators, the endoscopic appearances, etc., in evidence of the existence of hyperæmia and irritation which would naturally lead to organic stricture, and this could be demonstrated to the eye when division of the cicatricial tissue was made near the meatus.

THE CURABILITY OF URETHRAL STRICTURE BY ELECTRICITY; AN INVESTIGATION.

DR. E. L. KEYES, of New York, read the paper. Confidence in the treatment of stricture by electricity had lately been growing throughout the land. Therefore he had determined to study the method, and had received the kind co-operation of Dr. Robert Newman.

Six cases were selected, two being treated by Dr. Keyes, one by Dr. Newman under the observation of Dr. Fuller (Dr. Keyes's assistant), and the remainder by Dr. Fuller, who received instructions from Dr. Newman. A full description of Dr. Newman's methods and results, and the results claimed for it were given, followed by a detailed account of the six cases treated. In brief, the results in all the cases had been unsuccessful, not excepting the one treated by Dr. Newman, although Dr. Newman's account of it was somewhat different. He concluded that the claims for the treatment of stricture by electricity had not been demonstrated.

The paper was discussed by Drs. F. S. Watson, Bangs, Sturgis, Tilden Brown, whose experience had not been favorable. With apparently one exception, Dr. Chismore's experience had been unsuccessful.

NOTES UPON THE PROGNOSIS OF ORGANIC STRICTURE OF THE URETHRA.

E. HURRY FENWICK, F. R. C. S., England, sent the paper. Dr. Fenwick based his prognosis upon the amount of residual urine in the bladder, and upon the rapidity with which the bladder muscle regained its tone after the restoration of the urethral calibre.

SECOND DAY. — WEDNESDAY, SEPTEMBER 19.

THE OPERATIVE TREATMENT OF HYPERTROPHY OF THE PROSTATE, WITH STEREOPTICON DEMONSTRATIONS OF SPECIMENS, ETC.

DR. FRANCIS S. WATSON, of Boston, read an exceedingly interesting paper, illustrating it with the stereopticon.

It was followed by a paper entitled,

PROSTATOTOMY FOR ENLARGED PROSTATE AT THE AGE OF FORTY-TWO YEARS,

by DR. ABNER POST, of Boston.

The Secretary then read a paper from DR. WILLIAM M. MASTIN, of Mobile, on

THE HISTORY OF THE FILARIA SANGUINIS HOMINIS: ITS DISCOVERY IN THE UNITED STATES, AND ESPECIALLY THE RELATIONSHIP OF THE PARASITE TO CHYLOCELE OF THE TUNICA VAGINALIS TESTIS.

The paper was a long one and led to the following conclusions: It can be assumed that the filaria sanguinis hominis presents the pathological quantity in many forms of lymphatic disease, and mainly those implicating the genito-urinary apparatus; that the nematoid not only occurs in, but is undoubtedly indigenous to some portions of the United States, especially the Gulf States. In the present state of our knowledge prophylaxis consisted in filtration of the water to which access of the filarial mosquito was possible.

The President exhibited some chyolous urine from a man whose blood contained the filaria.

CLINICAL OBSERVATIONS OF DISEASES OF THE TESTICLE.

DR. L. BOLTON BANGS, of New York, recited three or four cases chiefly to show the difficulty of diagnosis in disease of the testicle, and he expressed the opinion that in far the greater number of cases of inflamed testicle the affection was due to direct injury or to extension of inflammation from the prostatic urethra. In one case a simple chronic inflammation of the testicle, with hydrocele, was mistaken by an able physician for tuberculosis, while in another a tubercular testicle had strongly the appearance of being cancerous.

The PRESIDENT, DR. BRYSON, and others who discussed the paper thought the tendency of the day was more and more toward conservatism in tuberculosis of the testicle. DR. TAYLOR, however, thought the organ should be removed.

CASE OF REMOVAL OF BOTH TESTICLES FOR RECURRENT CARCINOMA.

DR. FRANK W. ROCKWELL, of Brooklyn, read the history of the case, that of a man who early in January, 1887, applied for admission to the hospital. About

two months previously he had noticed a hard nodule in the right epididymis, and on admission the swelling was six times the normal size of the epididymis. The tumor with the testicle was removed, the testicle was free from the disease, the tumor was scirrhus cancer. The wound healed kindly. In the following May a similar condition was found in the left epididymis, but there was no recurrence at the former site of the disease, and no enlargements of the glands. The organ on the left side was removed, and the same condition was found as existed in the first specimen removed. The wound healed kindly, and there had been no recurrence in July, when the patient was last seen.

SOME POINTS IN THE DIFFERENTIAL DIAGNOSIS OF BLADDER AND KIDNEY AFFECTIONS, WITH DEMONSTRATIONS OF THE CYSTOSCOPE AND OTHER INSTRUMENTS.

Dr. Alexander W. Stein, of New York, read the paper in which he pointed out the difficulty of locating the exact seat of disease in affections of the genito-urinary tract, more especially in deciding whether the kidneys were affected, and if so, which one. The advantages of the cystoscope were pointed out. It was often important to learn the character of the urine as it came directly from one kidney or the other, and while various suggestions had been made in this respect, and methods devised for collecting the urine, yet liability to error was still great. The author had devised an instrument, which, however, had not yet been put to the test on the living subject, consisting of a catheter which could be introduced through the urethra, and its distal end, with its rubber cap and fenestrum, be placed directly over the mouth of the ureter, aspirating it, while the urine from the other ureter flowed out by the side of the catheter.

The President had once removed a diseased kidney in a patient on the assurance by Freund, who based his opinion on the collection of urine from one ureter, that the other organ was sound; yet, after the patient died some days following the operation, the remaining kidney was found atrophic.

DEMONSTRATION OF A PERFECTED EVACUATOR AND AN IMPROVEMENT IN THE METHOD OF REMOVAL OF DÉBRIS FROM THE BLADDER.

Dr. Fessenden N. Otis, of New York, reviewed the history of the evacuator devised by Professor Bigelow, with its improvements, and those of Sir Henry Thompson; presented his own which he exhibited before the New York Academy of Medicine about two years ago, and stated the instrument in his hand was, he believed, about as near perfect as could be desired. It permitted of no regurgitation of the débris, and at the same time was not encumbered by a strainer or valve. When empty it weighed but ten ounces, and when filled it weighed eighteen ounces, while Bigelow's when empty weighed twenty-four ounces, and Thompson's when empty weighed twenty-seven ounces.

LITHOLAPLAXY IN MALE CHILDREN.

Surgeon-Major D. F. Keegan, of Indore, Central India, sent the paper. The more they had practised this operation in India, the more they liked it. Accomplished facts had demonstrated how purely theoretical were the objections to it. Attention was directed to accompanying tables. They showed that litholaplaxy in male children was tried very tentatively at first. The average stay in the hospital for the boys after litholaplaxy was 5.7 days; the average weight of the stone was 95 grains; the percentage of mortality in 114 patients operated upon since 1883 was 3.5; but it was fair to exclude certain cases, which would reduce the mortality to one-half this figure. The table also showed that the Bigelow operation was capable of dealing with large hard stones in boys. No patient had returned for recurrence of stone.

OPERATIONS ON THE KIDNEY.

Dr. William H. Hingston, of Montreal, in this paper discussed more particularly nephrectomy, giving a brief historical review, and answering objections to performance of the operation. But the question which was most difficult of solution in the whole range of surgery was, what cases of renal disease were suitable for operative interference. Floating kidney had been mistaken for a diseased ovary, hydronephrosis for cystic tumor, cyst of the kidney for cyst of the ovary, or for cyst of the liver, or for carcinoma of the kidney, and so on. In one of his own cases he had found it impossible while operating, to say positively whether the tumor which he was removing was a tumor of the kidney or of the ovary. He cited some other cases illustrating difficulty in diagnosis of affections of the kidney in his own practice. In two or three cases he had been able to distinguish between other tumors and a tumor of the kidney, only by the presence of a limited resonance to one side of the umbilicus below the false rib. This was sometimes present in ovarian tumors, but very rarely so. The author claimed precedence in the removal of the kidney, having done the operation shortly before Simon, twenty years ago, the date of his operation being March 7, 1868. The tumor, which weighed fifteen pounds, was removed through an abdominal incision. The patient died before the completion of the toilet, the operation having occupied nearly three hours. Generally the lumbar incision should be chosen.

CASE OF NEPHRO-LITHIASIS, COMPLICATED WITH HYDRO-NEPHROSIS, IN WHICH LUMBAR NEPHROTOMY WAS PERFORMED.

Dr. Frank W. Rockwell, of Brooklyn, was the author. The case illustrated in a marked degree the difficulties and uncertainties of exploratory operations as practiced in the lumbar region, and certainly for small calculi in normal or slightly diseased kidneys. The man first consulted him in the fall of 1887. When a boy he had suffered from hæmaturia and a calculus had been passed. When seen by Dr. Rockwell he had renal colic, hæmaturia, and at times there was fulness in the right flank. Retention of urine occurred more than once. Dr. Keyes saw the patient in consultation, and advised, if other measures failed, an exploratory operation. The posterior incision was chosen, and the operation was performed in December. There was much difficulty in reaching and palpating the kidney. At one time Dr. Rockwell thought he felt a hard substance in the kidney, but was unable to feel it again, and the wound was dressed. The patient continued to suffer until the latter part of January, when much relief followed the passage of a stone. Again, in March, another fragment was passed, but he had not yet entirely recovered from his former symptoms. Dr. Rockwell thought that if what he felt during palpation of the kidney was the stone, he had probably hastened its passage down the ureter.

DR. PARKS, of Chicago, exhibited a renal calculus removed by lumbar nephrotomy. He first saw the man last May, and learned that he had suffered from intermittent attacks of pain and symptoms of renal calculi for ten years, the pain always being referred to the neighborhood of the left kidney. The symptoms in general pointing to renal calculus, he performed lumbar nephrotomy. There was great difficulty in fixing the kidney so as to carefully palpate it. He punctured the kidney in various places, but was still unable to feel the stone, and was about to give up the operation, when he again introduced his hand and on the posterior surface of the kidney felt a hard substance. The stone was rough, had numerous facets, and was grasped tightly on all sides, but he was enabled to remove it by a pair of slender forceps. The man made a good recovery and was quite relieved. He had performed nephrectomy in one case, removing a tubercular kidney as large as a man's head, through a lumbar incision which was extended around in front of the anterior superior spinous process of the ileum, and the point of the last rib was tilted out of the way. Regarding the diagnostic significance of the circumscribed area of resonance referred to by Dr. Hingston, he with others had mistaken an ovarian tumor for a diseased kidney, because of the presence of resonance limited to the inferior right iliac region.

SIR WILLIAM MACCORMAC mentioned the case of a young man who had symptoms of renal calculus sufficiently distinct to lead a surgeon in St. Bartholomew's to undertake nephrotomy by the lumbar incision, but no stone was found. He afterwards came under his care at St. Thomas's, when the symptoms were very severe, but in view of the negative results of the former operation he hesitated to interfere. He sent the patient away, but he returned after a time, and as the pain was referred more particularly to a point corresponding to about the middle of one ureter, he explored this canal, but found nothing and closed the incision. He learned that the patient afterward passed an examination for admission to the army, and was then perfectly well.

The speaker then related three cases of injury to the kidney, and sought the advice of those present. Three boys had been run over in the streets of London, and suffered, he presumed, a rupture of the kidney which was followed by a large hydro-nephrosis. In each one the tumor occupied the whole flank, extending to the median line. One boy after several tappings of the tumor, which contained urine, recovered. In the second case the tapping continued about a year, but failed, and he then made a drainage opening, but this failed, and the sinus did not close, and lastly he removed the remains of the kidney and the boy got well. The third case was still uncured; aspiration of the tumor had failed, and the question arose should drainage be attempted, or should the kidney at once be removed? It was because of the trouble from the fistula which was made for drainage and afterward refused to close, that the kidney was removed in the second case.

DR. FRED LANGE, of New York, discussed the choice of operations. He had never operated for tumors of the kidney. He had removed the kidney the seat of pyo-nephrosis, and in these cases he would always choose the lumbar incision to avoid septic infection of the peritoneum. In some other conditions the anterior incision might be preferable. Much care should be taken not to break off any facets in removing the stone from the kidney for evident reasons. He had devised some instruments for its safe removal. It was surgical vandalism to extirpate the kidney for symptoms of renal calculus so long as there was a possibility of removing the stone alone. The stone might be in the opposite kidney from that to which the symptoms had been referred.

DR. GILL WYLIE, of New York, had operated upon the kidney seven times the past four years, in two cases cutting posteriorly and fixing the dislocated kidney, and in five cutting anteriorly and removing the organ. As to what cases should be operated upon, much would depend upon the subjective symptoms. If these were not severe, the patient would be likely to refuse an operation however much it was urged by the surgeon. As to choice of operations, he did not doubt that when the kidney was loose from its natural bed, or was enlarged, the anterior operation was the easier and safer. He had no trouble from hæmorrhage or shock in the anterior operation. If there were strong evidences of pus, he would prefer the posterior operation. If he could not remove the kidney easily, he would close the wound and subsequently make the anterior incision. A glass tube instead of a rubber one should be employed for drainage; the glass tube remained patent.

DR. RAHMSDORF, of Cincinnati, had removed a hydro-nephrotic kidney through an anterior incision made for exploratory purposes, but the patient died of sepsis. He believed the anterior incision should be adopted in most cases, except when there was special danger of sepsis.

DR. DE FOREST WILLARD thought that if the diagnosis was not pretty positive, the anterior incision should be chosen.

DR. R. F. WEIR, of New York, had done two nephrectomies, three nephrotomies, and had had one case similar to that narrated by Dr. Rockwell. In this case the kidney was thoroughly palpated, but no stone could be felt, and the operation was abandoned. Within twenty-four hours afterward the patient was entirely relieved, and the urine was changed only in being somewhat bloody and containing a large number of uric acid crystals. He was rather loath to believe, therefore, that the trouble was due to only a recently formed calculus. Yet it was known that the handling of the kidney in searching for a stone, none being found and none being passed, had in several instances resulted in relief of the patient. Regarding Sir William MacCormac's case, he suggested giving the patient the trial of drainage before proceeding to nephrectomy. While he agreed at present with Dr. Lange in his preference for the posterior incision in cases of danger from sepsis, yet his conviction was not so firm but that he might soon change it. Might not the peritoneum be stitched to the edges of the wound in a way to prevent danger of septic matter entering its cavity?

DR. ANNANDALE, of Scotland, had cut down upon the kidney and had palpated for stone in a number of cases, and, finding none, closed the wound; yet the patients, excepting one, had afterward been relieved of their symptoms.

The PRESIDENT was of the opinion that in Sir William's case he should remove the kidney at once, since the attempt at drainage had resulted so unsatisfactorily in the first case.

DR. G. R. FOWLER, of Brooklyn, had, in the case

of a lady suffering from nephro-lithiasis, made an abdominal incision and palpated the kidney, but discovered nothing. Her sufferings increased after a year, when he made a lumbar incision over the left kidney, but again found nothing. After the second exploratory operation, however, the patient's symptoms disappeared.

The discussion was closed by the author.

ON THE EFFECTS OF RAPID CHANGES OF ALTITUDE IN AN ADVANCED CASE OF INTERSTITIAL NEPHRITIS.

Dr. George Chismore, of San Francisco, read the history of the case, that of a man who had peculiar aggravation of conditions related to his kidney affection when reaching the high points in the mountains on a journey from San Francisco to New York, in which latter city his case terminated fatally. The paper was a pioneer one in this line of investigation.

RÉSUMÉ OF AN EXPERIENCE OF SEVENTEEN YEARS WITH THE OPERATION OF DILATING URETHROTOMY.

Dr. F. N. Otis, of New York, in this paper, traced the successive improvements made in his dilating urethrotome since its invention in 1872, showed the advantages of this method of treatment over previous and other more recent methods, and the discoveries which it had led to, as the relative size of the penis to the urethra. He had used the dilating urethrotome in more than a thousand cases, and had never had a death nor abscess result. He used only the short, straight instrument, and pointed out the dangers of the other, which instrument-makers would not take off the market. The incision should be exactly in the median line on the roof, not on the lower surface. As to the radical cure of stricture by this treatment, he had tabulated a number of cases which he had been able to trace some years after the operation, and in a large percentage there had been no re-contraction. The first case he ever operated upon with the dilating urethrotome presented, recently, the same size of the urethra as after the operation years ago.

STONE IN THE BLADDER IN CONNECTION WITH SPLENIC LEUCHÆMIA.

Charles Williams, F.R.C.S., of Norwich, Eng., sent the paper. The tendency to rapid formation of uric acid stone in splenic leuchæmia was suggested, and the dangers of operations in leuchæmia because of liability to hæmorrhage were pointed out. His patient was operated upon, and died some days afterward.

CASE OF BOWEL ENDING IN THE URETHRA OF A CHILD FOUR WEEKS OLD; RELIEF BY OPERATION.

Dr. Arthur T. Cabot, of Boston, presented the paper.

PERINEAL LITHOLAPLAXY.

Mr. Reginald Harrison, of Liverpool, had found that his list of cases of vesical calculi, which came from a region of England not favorable for the development of stone, in which the stone had recurred, had at the bottom of the list those stones of spontaneous occurrence which were independent of previous operation or assignable cause, and that recurrence was usually traceable to some purely mechanical cause. For this reason, it had appeared to him that in suitable cases perineal litholaplaxy was preferable to the usual operation, inasmuch as it permitted of digital exploration of the bladder and associated parts, both before and after removal of the stone. It permitted of rapid evacuation of the stone, and also of drainage and irrigation of the bladder. It appeared that all this could be accomplished by perineal urethrotomy without encroaching upon the neck of the bladder. An important object of this operation was to cure the conditions which led so often to recurrence of stone. He cited three or four cases in which he had performed it. The operation itself was not new.

AN UNUSUAL CASE OF URETHRAL CALCULUS.

Dr. Harvey G. Mudd, of St. Louis, was the author of the paper.

A negro, aged forty-eight, had passed a stone when a youth. He had had trouble with urination five or six years; there was blood in the urine. Having difficulty with urinating, and recognizing some obstruction in his urethra, he was in the habit of pushing a knitting-needle down the urethra, in the hope of freeing the passage. "It felt as if it struck a lot of bones." Forward of the bulb, Dr. Mudd removed by external urethrotomy a stone weighing 281 grains, three inches in circumference. Several smaller stones, altogether weighing 82 grains, were removed posteriorly and from the bladder. The patient recovered from his septic symptoms, and was now healthy.

A paper on

SYPHILOMA OF THE VULVA,

by Dr. J. Nevins Hyde, of Chicago, was then presented.

Dr. R. W. Taylor, of New York, was elected *President;* Dr. John P. Bryson, of St. Louis, *Vice-President;* Dr. Arthur T. Cabot, of Boston, *Secretary.* The next meeting will be held at Newport, some time in May, the exact date to be fixed by the Council.

AMERICAN DERMATOLOGICAL ASSOCIATION.

Twelfth annual meeting, held at Willard's Hotel, Pennsylvania Avenue, Washington, D. C., Dr. I. E. Atkinson, the President, in the chair.

TUESDAY, SEPTEMBER 18.—FIRST DAY.

PRESIDENT'S ADDRESS.

The student owes to Hebra the beginnings of a classification of diseases in dermatology based on the foundation of pathology, and it is only by following on in this line that we can hope to make the greatest progress. But simple enumeration of pathological changes is not definite enough for our purposes, for we often find examples of similar effects which are the result of very different causes, and, on the other hand, the same cause may produce at different times, and under different circumstances, results which seem quite unlike. It is, then, to etiology, as the soul of pathology, that we must turn our attention.

The first proposition is illustrated in the diphtheritic membrane, which is seen during the course of diphtheria, and the membrane which is seen in scarlatina, and which cannot be distinguished from the former. A nephritis may be set up by the poison of scarlatina, of small-pox, of malaria, or by the action of certain drugs, the resulting lesion being very similar in all the cases, since nature uses the same weapons against different enemies. Witness, also, the alopecia of tropho-neurotic origin, and that resulting from sy-

philis; the herpes of pneumonia and that of malarial fever; the eruptions of rötheln and rubeola.

It has been supposed that micro-organisms are the direct cause of pus-formation, but further researches seem to show that not the organisms themselves, but their products — the ptomaines — are the active element in the suppuration, for these products are able to produce the pus without the micrococci themselves, while the micrococci alone are inert. It has been found that the staphylococcus pyogenes aureus produces ammonia, and it may be that this is the active agent in the formation of pus, since a sterilized solution of ammonia will cause suppuration. In all suppurations of the skin the etiological factor becomes of prime importance. Bockhart found that the suppuration of impetigo, furunculosis and sycosis was due to the action of the staphylococcus pyogenes aureus and albus. These bacteria are found also in the secondary results of specific action. In the pustules of variola, for instance, the staphylococcus aureus is found, and to this is ascribed the pus formation, though not the contagion. So it is probable that there are many so-called skin diseases, where the lesions are but the local manifestation of a general disease. In such a class, perhaps, may be put dermatitis exfoliativa, pemphigus, dermatitis herpetiformis, and others of that sort. In the dermatitis hypetiformis of Duhring there have generally been found lesions connected with the cerebro-spinal system, or tuberculosis, but as yet there has not been found any constancy of lesions which would enable them to be called a well-defined pathological group. If it be true that the eruption is a secondary lesion, due to nervous or vascular irritation, then the disease serves a place in our text-books only as we admit purpura, and other disorders which we recognize as largely systematic. It is the task of pathology so discover the relation between the general disease and the secondary manifestations; but until our knowledge becomes more definite we cannot hope that our classifications of disease will prove more than tentative; and until that time shall come we shall have to treat diseases for what they appear to be, rather than what they are.

Dr. G. H. Rohe, of Baltimore, read a paper on

THE ELECTROLYTIC DECOMPOSITION OF ORGANIC TISSUES.

He considers most probable the theory of Clausius, and believes that the human body should be looked upon as a complex electrolyte, and not a simple conductor or resistance. A moderate current would serve as a healthy stimulus, but in the case of pathological products, inflammatory infiltrations, new growths, serous effusions, etc., it stands to reason that an electrical disturbance of some degree, or continued for some time, may produce such a modification of nutrition in the tissues as to promote its regressive metamorphosis. That this is the case the writer firmly believed, though he had to confess his inability to give an exact demonstration of the process.

Sometimes the regressive action may be kept up after the current has been discontinued. It was thought at first that this result was due to the contraction of fibrous tissue, but it is more likely to be the continued cellular activity which goes on after the exciting force has ceased to act. In the treatment of strictures the reader would expect to see the very best of results, and without any unfavorable action on the mucous membrane itself. There has been too great a tendency on the part of surgeons to look upon the use of the electrical current as beneath their notice.

Dr. Heitzmann, of New York, spoke of the favorable results reported by Dr. Hardaway, of St. Louis, in the treatment of keloid. Althaus, of London, first introduced the treatment, some twenty-five years ago, but when he was here last year he told the speaker that he had given up the use of the treatment, as he considered it of no value. The speaker had tried it in one case, but without result.

Dr. R. B. Morison, of Baltimore, had had good results in the growths that came in the scars of operations. In one case a scar that was raised a half inch was rendered flat and white, and the superficial veins were cut off. In one case of keloid in the negro he had had a good result.

Dr. G. H. Fox, of New York, had tried the treatment in four or five cases of true keloid, and also in hypertrophic scars, but could get only a temporary benefit resulting from the cutting off of the superficial vessels. In one case where he had treated tumors, and had expected to get good results, the effect seemed to be an increase in the size of the larger tumors, and the formation of smaller ones.

Dr. J. N. Hyde, of Chicago, would agree with Dr. Fox. After a faithful trial in one case, he had been much disappointed.

Dr. Rohe said, in conclusion, that he had had no opportunity of trying the current on the true keloid; but he had been able to reduce the size of the hypertrophic scars. Since the report of Dr. Hardaway's first publication, Dr. Broeck, of Paris, has used electrolysis in keloid, and reports at length a number of cases in which it has been used successfully.

Dr. C. Heitzmann, of New York, read a paper on

THE VALUE OF SALICYLIC ACID IN DERMATOLOGY.

He has been using the remedy for the last three years. It has two well-marked properties. The first is the peculiarity of acting on the horny layers of the epidermis, which it first softens and then destroys. Its other action is as a paraciticide. These two properties open a large field for research. We should be careful not to include cases where we have merely "impressions" as to its value; but there are many cases in which there can be no question as to its utility, and in some of these it had never been used before.

The remedy may be used as a powder, a plaster, or in the alcoholic solution. It has the advantage that it does not discolor the skin or linen, and has no odor. It was used in twenty-four kinds of cases.

In hyperidrosis its action is well known. The German soldiers use it in a one per cent. salve of tallow, applied to the feet when upon the march. In seborrhœa, especially when combined with acne, it has given brilliant results. One per cent. of the acid with six to eight per cent. of sulphur, is an excellent application for dandruff. A prescription with tar the reader likes better, but it is less agreeable to the patients. In urticaria it is an excellent means of allaying the itching. In furunculosis an ointment of six to ten per cent. has prevented an outbreak, and checked the disease. But to be sure of results the quality of the acid must be guaranteed. In two cases, where the prescription was filled at random, there was no good result, but when Shaering's salicylic was substituted the effect was immediate.

In one case of dermatitis herpetiformis a lotion of the acid proved the best thing the patient had tried, although it was not capable of smothering the disease or preventing recurrences. In psoriasis, after the chrysarobin and tar it is the very thing to be applied, though the peeling off of the scales is not as rapid as with other remedies. In lichen planus the salicylic acid is far superior to carbolic acid or sublimate. It can also be applied over a larger area with safety. It allays the itching, removes the scales, and flattens down the papules. The reader had prescribed three per cent. solutions, which were to be diluted at the beginning of treatment. Six cases were treated, and all did uniformly well without the administration of arsenic.

In all varieties of eczema the results were satisfactory. Ninety-six cases were treated, using generally one per cent. of the acid, with equal parts of zinc powder and starch, in two parts of ointment. If it is eczema madidans one-half per cent. is better. In acne, a three per cent. solution will remove pigment patches, assist in removing comedones, and render the skin soft. In acne rosacea the results were good, but in sycosis less good. The remedy does not seem to penetrate deeply enough between the furrows.

In impetigo contagiosa it is *the* remedy which will cure the disease in ten or twelve days. In keratitis senilis, callosity, clavus and verucca its action in removing the thickened portions is well known. In ichthyosis it is easy to remove the scales, but they will return. In lupus erythematosus and lupus vulgaris the results were brilliant at first, the excrescences flattening down rapidly at first, but not a case was cured. For pruritus in the shape of a lotion it is excellent.

In tinea the solution with gutta-percha is better than Taylor's remedy. But generally the disease will not be cured by any one remedy, and we are only too glad to have more than one In tinea versicolor a one per cent. solution is effective.

Dr. Pye Smith, of London, spoke of his use of the remedy in the hyperinotic inflammations in the soles of the feet and the palms of the hands, where there are fissures; here the effects of the remedy are wonderful. He could corroborate what Dr. Heitzmann had said in reference to the use of the remedy in furunculosis, especially as it occurred in school-boys sometimes for months together. He believed that the contagion was carried from one point to another in the dressing. In the treatment of the individual pustules he always hardens the surrounding skin by bathing it in lead lotion. In lichen planus he had tried the salicylic acid with some success, but had found it difficult to follow the cases closely enough to be sure of his ground. He would prefer to wait till more material had been collected. In general, he felt that there were not enough of the cases to warrant definite conclusions.

Dr. Smith then expressed his gratification of the reception he had received and at the progress which Dermatology had been making in this country within the past few years.

Dr. L. D. Bulkley, of New York, had used the remedy largely in many of the cases referred to, and would mention particularly the hyperidrosis of the axilla in ladies. He gives with great confidence a ten per cent. powder, with one drachm oxide of zinc and the rest starch. In eczema he had seen acute attacks started up by it. He would also mention favus of the scalp, in which he considered it very valuable, in the form of a strong lotion. It is good in seborrhœa, but if too strong, even when mixed with oil, the patient will come back and say it is too drying.

Dr. Fox had used it a good deal in cases of general eczema and psoriasis, when he wished to soften the skin and remove the scales.

Dr. A. Van Harlingen used it in the treatment of chronic eczema of the legs in a paste with glycerine and zinc oxide, made into a paste with five per cent. of the acid. If carefully applied the patient will go for from three days to a week without redressing.

Dr. E. B. Bronson, of New York, thought that in most cases we use the remedy as a preliminary measure, as it prepares the surface for other remedies. As to the manner which the acid performed its work, he did not think we yet knew its whole action, and he quoted Unna as saying that it would demand further research. At present, he thought its curative properties were limited to the cases in which it exerts its germicidal action.

Dr. Heitzmann, in closing the discussion simply said that the field of the remedy in hyperidrosis would extend to any portion of the body which was affected, instancing especially the folds of the groin and the genital regions.

Dr. E. B. Bronson, of New York, read a paper on a new remedy

ANTHRAROBIN.

It was manufactured by Liebermann, a Berlin chemist, and was first employed on theoretical grounds, on account of its resemblance to other remedies of known value. Alizarine belongs to the same class, and from this anthrarobin is formed by a simple process of reduction. It is a powerful oxidizing agent, one gramme taking up 120 c.c. of oxygen. It is a yellowish white, granular powder, sparingly soluble in chloroform and ether, readily soluble in alcohol and weak alkaline solutions. It mixes readily with fats in the formation of salves. The presence of an alkali increases the reducing effect.

The reader had treated cases of psoriasis at the Charity Hospital, applying the anthrarobin on the right side of the body, and chrysarobin on the left side. It was used in a ten per cent. mixture, with vaseline, and once a day an alkaline bath was given before the application. Out of the eight cases treated the first five were somewhat surprising. Improvement began sooner and went on more rapidly on the right side, but after the applications were ceased there were more recurrences on the right side. In the other three cases the alkaline baths were omitted, and the improvement was more marked on the left side; but as soon as the baths were commenced the right side began to improve more rapidly. The staining is a dark-brown, and deeper than with chrysarobin, but it is limited to the area to which it was applied. In only one case, and when a twenty per cent. application was made, was it irritating. It has no antipruritic effect.

Dr. Heitzmann had seen its effects in a case where it was applied carelessly, and had made up his mind he would not use it. It is less powerful than chrysarobin, and just as nasty as pyrogallic acid.

Dr. P. A. Morrow had seen the cases treated by Dr. Bronson, and could confirm his statements of the value of the remedy. The anthrarobin was less irri-

tating, and less curative than the chrysarobin. He thought the remedy would be used in a good many cases of psoriasis where the skin was delicate, where the stronger remedy would not be tolerated, either from its irritating action, or from some idiosyncrasy.

DR. BRONSON, in conclusion, pointed out that while the new remedy was less likely to irritate than chrysarobin, and seemed of less curative action than that drug, yet it is to be borne in mind that it may set up a dermatitis.

AFTERNOON SESSION, 3.30 P. M.

DR. R. B. MORISON, of Baltimore, read a paper on

PERSONAL OBSERVATIONS ON SKIN DIEASES IN THE NEGRO.

The negro seems less liable than the white to diseases of a severe type. The skin is coarser in all its elements, and is less sensitive to poisons, nervous lesions, and to constitutional or general influences. The difference in the blackness of the pigment granule determines the shade, there being no difference in thickness of the pigment layer in the black and the mulatto.

Five hundred cases of skin disease have been tabulated. In general the nearer the color approaches to the white the less difference there is in the character and frequency of the diseases. Acne is very rarely seen: more frequently in the mulatto. In chancre the induration is more marked. Chilblain is less frequent and less troublesome than in the white. Chloasma shows itself as whitish spots, and the treatment is reversed, for we must produce pigment. Erythema multiforme was seen in two cases where the hands had been used in scrubbing; there was burning and itching, but no redness. In erythema nodosum less pain but more itching. It was seen on the legs. Acute eczema showed 19%, as compared with the 30% of whites. It occurs in spots, and looks like dust on a black coat. It is more amenable to treatment than in the white. Cases of chronic eczema are seen in the men who work at oyster shucking. Nothing but a change of occupation will cure it. Favus is rare, as also is furunculosis. Herpes facialis is common in the babies, as the result of the sugar-tit, which is a piece of bacon dipped in molasses and wrapped in a piece of linen.

Zoster has less pain, and shorter course; keloid sometimes follows. In impetigo contagiosa more itching; crust more yellow. May be confounded with herpes in the diagnosis.

Keloid more common. Two cases after small-pox. In the mulatto it is almost as uncommon as in the white race. Lupus is rare, which seems peculiar in view of the bad habits of the negro. Keloid followed in the case of the one noted. When the tubercles heal they leave a white spot. Lymphadenitis is very common, suppuration is slow, and absorption seldom successful. Pediculi are less common on account of the short hair. Pruritus is exceedingly common, and apparently some diseases appear only in this form. They speak of an "itching in the blood," and all that can be found is a dry hard skin. Psoriasis occurs, and when the scales are removed there may be a bleeding surface. A white spot is left after a cure. Scabies is uncommon, and less troublesome. Seborrhœa capitis is seen in fifty per cent. of the black women, due to their lack of cleanliness. In syphilis the chancre occurs sooner after the exposure, and there is more induration. The inguinal glands become much enlarged, and are prone to suppuration. The secondary eruption may be easily overlooked, as there is no redness. Itching is also likely to be present. The mouth and throat are generally diseased. The tertiary stage is more likely to follow.

Tinea is less troublesome, and the treatment satisfactory. Urticaria is common, and accompanied by some burning and itching. Dermatitis venenata is very uncommon. Sometimes the itching seems to be the only evidence of poisoning in this way. It seems to the reader probable that the pigmentation of the skin is the primary factor which causes the difference in the various diseases. Whether any difference in treatment is to be recommended must be left to future investigation to decide.

DR. HEITZMANN did not think the term chloasma should be applied to a condition where there was a loss of the pigment of the skin. The fact that there was itching in the eruption of syphilis seemed to him remarkable, since it was so uncommon in the white.

DR. MORROW had been very glad to hear the paper. He had found it very difficult to make satisfactory diagnoses in the case of negroes.

DR. BULKLEY had seen a number of cases of chloasma in negroes, and also some cases of vitiligo. He was rather surprised that there were two cases of chancre upon the upper lip.

DR. SHERWELL remarked the absence of any case of lupus in the five hundred cases. Generally there is about one per cent.

DR. FOX noted that there was no mention of the exanthemata. He had sometimes been asked to give an opinion in cases where scarlatina was suspected. In the first stages one had to depend on the fever and the examination of the throat. In the stage of desquamation he had been struck with a peculiar "peppered" appearance of the skin, the smooth lustre having been lost.

DR. FREDERICK had seen more cases of elephantiasis arabum, one being double, he did not remember any case of extra-genital syphilis.

DR. ROBINSON would criticise the drawing of so distinct conclusions from such a small number of cases. The character of the observations are of great interest but we need more of them.

DR. ATKINSON had long felt that a chapter in the history of skin diseases was wanting, and hoped that statistics would be kept for a longer time. Though he had found acne uncommon in the negro, yet there is a very common condition of the face of young colored men who are heavily bearded and who shave frequently, which seems to be a peculiar folliculitis. Each pustule is penetrated by a hair, and on incision a drop of pus escapes. It is very persistent, and usually gives no trouble. He could confirm the observation as to itching in syphilis. The papillary syphiloderm is also very common with them, and it resembles the lesion of ring-worm at a certain stage, when it has an iris-like margin. Vitiligo is probably not more common than among the whites, but the contrast in color makes it more prominent.

A member asked if there was any good treatment for the folliculitis of the beard; and he would inquire why Dr. Morison considered the pigment the element which makes the difference in the character of the diseases; why might it not be in the lymphatic

system which would carry off the products of inflammation at a more rapid rate.

Dr. Atkinson had usually observed the folliculitis of the beard accidentally, and when he had been called upon to treat it, he had not met with very good success.

Dr. Morison said that the diagnosis of chloasma had been made from the general symptoms rather than from the spot. It was not leucoderma, and he supposed it corresponded to what is called a uterine chloasma. He had been taught that itching was not present in the eruption of syphilis, but in the negro it is not true. He would agree with Dr. Morrow that the number of cases was too few to more than point the way toward further study. As to the influence of the pigment, that was only a suggestion, and not a settled conviction.

Dr. P. A. Morrow read a paper on

THE RELATIONS OF PAPILLOMA TO SYPHILIS AND TUBERCULOSIS OF THE SKIN; WITH REPORT OF A CASE.

The term papilloma is used in a general way to include a great variety of lesions. Papillary outgrowths from the pathological side, are not specific products, but rather accidental results. It is probable that the papillary proliferations which follow a chronic inflammation of the corium are more or less closely allied to the giant granulations which develop in connection with the cicatrization of wounds or ulcers. Practically, it is often impossible to determine, from the aspects of the tumor, whether it is a primary or secondary process.

The patient, an Italian, aged thirty, was first seen in February, 1888. Two and a half years ago his left wrist became inflamed and was subsequently amputated. Otherwise has been and is in good health. A large portion of the face is covered with crusts, under which are found papillary growths, everywhere uniform, suggesting the cauliflower. Pus escapes from fissures between the masses. The vegetations are found to rise directly from a sound skin. The papillomata are soft and fleshy, but soon dry, and are accompanied with much heat and pain. There is a chain of glands in the right side of the neck.

Syphilis was ruled out by the lack of initial symptoms, the sluggish development, the absence of concomitant symptoms, and the failure of treatment, and especially by the absence of the hard brownish-red margins which are almost pathognomonic of the vegetating syphilide. Lupus verrucosa, and the tuberculosis verrucosa cutis were suggested. The reader here went into the discussion as to the identity of lupus and tuberculosis. To him a strong proof was the large number who have tuberculosis elsewhere in the body. It seemed most likely that the disease was a tuberculosis. Some of the papillary growths were removed and submitted to Dr. Elliot, and the bacilli of tuberculosis were found. In accounting for the origin of the disease, the reader considered it likely that the previous disease of the wrist was a tuberculous osteitis, and that the bacilli were in some way transferred from that point.

Dr. Fox thought that frambœsia occurred not only in the pustular form of syphilis, but in the ordinary tuberculous form of the disease. He believed that a true eczema might be engrafted upon a syphilitic patch, but he did not remember having seen a disease modified by the existence of syphilis. He called attention especially to what is termed eczematous frambœsia, which occurs on the surface of these syphilitic patches.

Dr. Morrow asked why they were called eczematous?

Dr. Fox replied that they had the characters of acute eczema, and were limited to the syphilitic patches.

Dr. Bronson had had care of the patient for a time, and was much interested in it. He had at first supposed the disease to be syphilitic, and had treated it accordingly. Under the application of a solution of corrosive sublimate there was improvement for a time. He considered the diagnosis of tuberculosis as good as any that can now be arrived at. It was surprising that after so long a time there were no signs of tuberculosis elsewhere.

Dr. Sherwell would take issue with Dr. Fox in regard to the influence of syphilis upon other diseases, as eczema. He considered that such an influence was sometimes seen.

Dr. Heitzmann called attention to the progress that had been made in the study of these affections in the last forty years. He regarded this case as settled from the moment the tubercle bacilli was discovered.

Dr. Morrow asked an expression of opinion as to the identity of lupus and tuberculosis.

Dr. Atkinson reminded Dr. Morrow of the paper by Dr. Morison not long ago.

Dr. Morrow had understood that Dr. Morison had changed his views since the publication of that paper.

Dr. Heitzmann was convinced that they were identical, and that the vast majority of dermatologists subscribe to the same view. Kaposi does not agree.

Dr. Bulkley considers the presence of the tubercle-bacilli as proof of the identity of the diseases.

Dr. Fox spoke of the claim that had been made, that there was a difference between the ordinary tuberculosis and the lupus vulgaris.

Dr. Sherwell, from clinical data, thought there might be still room for doubt. In his experience, there are many cases which have no evidence of tuberculosis elsewhere.

Dr. Robinson did not think the question proven with any positiveness. It is true that bacilli have almost always been found, but they have generally been very few in number. Cultivations have been made, and tuberculosis has been produced, but the objection has been that no one has yet produced lupus vulgaris by the inoculation of the tubercle-bacillus.

WEDNESDAY, SEPTEMBER 19TH. — SECOND DAY.

Dr. John E. Graham, of Toronto, Can., gave

A REPORT UPON THREE CASES OF DERMATITIS HERPETIFORMIS.

The first two were in men, with history of two and five years' standing. In each there were many recurrent attacks, with extension from the face over the whole surface of the body. There were papules, erythematous patches, vesicles, and brown discolorations. The third case appeared in a strong, healthy woman, twenty-three years old, who had had one miscarriage. On several occasions in early life she had had eruptions on the face of a vesicular and bullous character. Just after the birth of the second child, which was a healthy infant, bullæ appeared at the corner of each

eye. Then they formed on the face, and the disease gradually extended over the body. She failed gradually, and died after many months. There was no autopsy.

After the rupture of a bulla, there might be: (*a*) scab-formation, with healing and brown discoloration; (*b*) a new bleb would form on the site of the old one; (*c*) a raw surface might be left; (*d*) extension might take place by simple loosening of the epidermis, without any formation of serum beneath. The distinction from pemphigus is made by the herpetiform arrangement of the lesions and by the peculiar method of extension.

DR. H. W. STELWAGON, of Philadelphia, then read a paper on

DERMATITIS HERPETIFORMIS, WITH NOTES OF THREE CASES.

The first case at one time resembled pemphigus, at another herpes iris, and at still another erythema multiforme. Many attacks have occurred, and the patient can tell of their approach by a peculiar itching of the skin. In the second case, the conjunctiva and the mucous membrane of the mouth and trachea were affected. After he was nearly well of one attack, another came on immediately after a bath. Arsenic was given in each case, with good results. In the third case, a female, there was a tendency to umbilication, but not to rupture.

DR. HYDE thought we had come to the point where we must separate impetigo herpetiformis and some of the exfoliative disorders from the group of cases that had been so admirably described by Duhring. He would not necessarily associate Dr. Graham's third case with this group simply on the ground of repeated attacks. The previous outbreaks, he thought, might have been of a different character.

Dr. Hyde reported at length a case occurring in a man, with symptoms and eruption precisely like the third case of Dr. Graham, where eventually the whole area of the body was affected, and there was very extensive separation of the skin. The continuous water-bath of Hebra was used, but death occurred after three months. It only differed from the case of Dr. Graham in the absence of previous attacks.

DR. BULKLEY referred to the address of the President in relation to the need of greater knowledge of the etiology of these affections. He had shown at the New York Dermatological Society a typical case of this disease, which had afterward died, and internal sarcoma was found at the autopsy. Dr. Stelwagon's third case seemed a typical one, and he had learned of her death a month ago, of some brain trouble. While she was under his care she had been taken with acute congestion of the brain, but became better. He thought the dermatitis was an illustration of the acute brain lesion.

DR. FOX had treated one of the cases reported, and it had shaken his belief in the identity of the various diseases. It illustrated how, from time to time, a disease might pass through different phases of development, and appear as different diseases to different men. He had seen the case between the outbreaks of vesicles, and there was a diffuse erythema. In this case, arsenic did not have a good effect. He had seen one very severe case of bullous eruption get well with no internal medication, and if arsenic had been exhibited the result would have been attributed to it.

DR. HEITZMANN had been slow in accepting the classification of Duhring, but, so far as his own experience went, he would agree with him. He would not include the impetigo herpetiformis of Hebra.

DR. SHERWELL had found diabetes in two cases of the disease. They were relieved by diet; but there were others who had no such trouble.

DR. GRAHAM had examined the urine of all the cases, and neither sugar nor albumen had been found. He believed that the third case arose from a different cause from the others, but we had not yet reached a point to distinguish them.

DR. STELWAGON believed it best to put these various affections under one head, for we at present have no better place to put them. His doubtful case might have been classed as hydroa, but that is a still more doubtful term. He did not believe that diseases should be separated because they had different etiological factors. Acne is acne, though it may be produced in different ways.

DR. ATKINSON recognized the fact that there was a strong pathological chain binding together this series of cases, but we classified disease according to pathological or clinical expressions simply because data were lacking for an etiological classification.

DR. ROBINSON thought there were great limitations to a classification from an etiological standpoint; it could never be complete, and, therefore, not desirable.

DR. A. VAN HARLINGEN read a

NOTE OF A CASE OF FILARIA MEDINENSIS.

The patient worked in the Custom House, and opened invoices from different countries. Last September, he noticed a small red papule under the skin on the back of the hand, accompanied with itching, but not with pain. This pushed along under the skin, and showed a sinuous red coil. It was cut down upon, but was not found, and assafœtida was administered in three-grain pills, three, 4 t. d. At the end of four days there was but a trace of the line. It has remained entirely well.

But two other cases have been reported in this country in persons who have not been in tropical lands. The method of propagation is not known. The reader thinks that generally too much stress is laid on the furuncle at the site of the parasite. In the countries where it abounds, they cut down on it and draw the filaria out. Care must be taken not to rupture the mature worm, as it is a female filled with young. Electricity has been used, and injections of carbolic acid. Iodide of potassium has been given internally.

AFTERNOON SESSION — 3.30 P. M.

DR. J. N. HYDE, of Chicago, read a

NOTE RELATIVE TO THE CONDYLOMA FROM LESIONS INDUCED BY INGESTION OF SOME OF THE IODINE COMPOUNDS.

The patient, a girl of eighteen, who had never menstruated, injured her right elbow-joint when fourteen years old. Anchylosis had followed, and she had entered the hospital for the removal of a small spicule of necrosed bone that was protruding. There was no history of syphilis. She was given one grain of iodine and one grain of the iodide of potassium. Within three days she had "caught cold," but the drug

was continued. Very soon, tubercles appeared on the face, and extended well over the forehead and down to the neck. It looked something like a case of mycosis fungoïde, the growths being covered with a yellowish discharge. The patient, all the time, remained in the best of general health, and it was decided to try the effect of omitting all medicines, when all trace of the lesions rapidly disappeared. As a matter of proof, the iodide was given again for a few days, and the lesions promptly returned.

In a second case there was an almost confluent eruption of the face and forearms, consisting of roundish or oval flattened tubercles, tending to become umbilicated. The patient was well three weeks after the discontinuance of the medicine. The following conclusions were arrived at:

(1) When iodide compounds, irrespective of the size of the dose, have been administered to well-nourished infants, children, and persons whose skins are in a condition usually found at these ages, a quasi-bullous rash may occasionally appear, whose elements differ from the blebs which sometimes form when the drug has been administered to older persons, syphilitic, cachectic, or in grave conditions of prostration.

(2) The interest attaching to the recognition of the value of the eruption is partly due to the fact that in the claims last named it may superimpose upon an eczematous or seborrhœic condition for which the iodine has been administered.

(3) The regions involved are almost exclusively the scalp, face, neck, upper chest, forearm and hand.

(4) The subjective symptoms are comparatively insignificant. The disproportion between the severity of the lesions and the conditions of the patient is of high diagnostic value.

(5) Involution commonly progresses rapidly after the discontinuance of the drug, and rarely there are left small atrophic patches.

Dr. Heitzmann would think it wiser to omit the term "vegetative" in the title. He had seen a case where a general eruption of blebs over the body had been at once relieved on the discontinuance of an iodide which the patient had been taking. He had seen tubercles similar to those described by the reader following the use of the bromide of potash. He would explain the action by the attempt of the drugs to leave the skin by way of the glands.

Dr. Morison had seen somewhat similar eruptions follow the ingestion of small doses of the permanganate of potassium.

Dr. Morrow had seen similar cases, and reported last year a case where there were vegetative lesions following a bullous eruption, and which were so severe that several medical gentlemen would not believe it was caused by the drug. But they quickly disappeared when the drug was omitted. The peculiar localization of the eruption was of interest to him, and he was not ready to accept the view that the cause was the elimination of the drug by the glands, for the drug has not been found in the lesions, even when it has been given in very large doses.

Dr. Stelwagon reported a case that he had recently seen, where the lesions were small vesicles, soon becoming pustules, and then spreading in size. He became improved under simple treatment, but afterward died of cardiac disease.

Dr. Atkinson reported a case where there had been a follicular eruption. Ulcerations took place, but on withdrawing the iodide the recovery was rapid. He considered the eruption to be of nervous origin.

Dr. H. W. Stelwagon read a paper on

MOLLUSCUM CONTAGIOSUM; A PRELIMINARY REPORT.

English writers say the disease is contagious; the Germans and French take the opposite view; the Americans side with the Germans. The reader had seen thirty-two cases in four groups, containing, respectively, four, thirteen, three and twelve cases. All the cases in each group appeared in the same institution or the same family. Various attempts at inoculation were made, but without success; at least, no characteristic lesions were produced. He concluded:

(1) The disease generally is seen upon exposed parts, or parts that come in contact with the hands, such as the genitals.

(2) It occurs generally in children, and among the poorer classes.

(3) It is very common to find the affections in groups, or series.

(4) In admittting its contagious nature, it must be acknowledged that it possesses this quality to an extremely slight degree.

Dr. Hyde had been much interested in the history of twin sisters who had come to his clinic. On the first day one had some lesions of the molluscum, which, under treatment with the monochloride of mercury had disappeared at the second visit. But at this time the second sister had become affected, just as the first one had been before. There was such an absence of symptoms that he inoculated himself on the arm from a typical lesion on the face of the twin. On the third day there was a vesicular pustule. On the fourth day it formed a crust, and with that he inoculated two medical students, upon whom abortive lesions formed.

Dr. Stelwagon wished to state that only two or three inoculations out of a series of a dozen or more inoculations had taken. The effects were similar to those caused by the inoculation of the impetigo contagiosa pustules.

Dr. Hyde had been struck with the relative rarity of the cases.

Dr. Morrow, from his experience had supposed the growths came from direct inoculation. He thought there was a certain relation between molluscum contagiosum and warts, as Dr. Fox had intimated some years ago. He had seen a boy almost covered with typical lesions of the kind under discussion, in whom they had all disappeared in the course of a few months, though only a few of them were treated.

Dr. Sherwell had been impressed with the clinical rarity of the disease during the last few years. He had seen one series of cases in an institution, where the indications were that it was contagious. Before seeing these cases he had not believed in the contagiousness of it, but was led to change his opinion at that time.

Dr. Robinson believed in the contagious character of the disease, though it was entirely upon theoretical grounds and the evidence of others.

Dr. Fox some time ago had made repeated inoculations on himself and others, but all results were negative. The only successful inoculation that he knows is the one related by Retzius. It generally occurs in

those who are in poor surroundings or in poor health, but had been seen in those who were in robust health. He had no doubt that the ordinary dry warts that are seen on children's hands are contagious.

DR. MORISON was of the opinion that it was a parasitic disease which may be carried from one to another.

DR. HEITZMANN called the attention of the society to an article by Neisser in the last number of the *Vierteljahrschrift fur Dermatologie*, in which he positively claims that there are peculiar corpuscles which are the parasite.

DR. C. W. ALLEN, of New York, on invitation of the president, said that he had seen in the Baretta Museum of St. Louis Hospital in Paris, the past summer, a wax model of a typical lesion in the arm of a child, which had been produced by inoculation; and this to his mind would be positive proof of the contagiousness of the growth. The inoculation had been done under Fournier's direction.

DR. STELWAGON, in his cases, had never seen any connection between the warts and the tumors. The inoculations were made in the children who had the disease.

DR. G. H. FOX read a paper on

THE NON-IDENTITY OF LICHEN PLANUS AND LICHEN RUBER.

The reader reported five cases of true lichen ruber that he had seen, and which he considered a large number, considering the rarity of the disease.

From his study of these cases, the reader would believe in the essential difference of the two affections.

DR. A. R. ROBINSON read a paper on

THE QUESTION OF RELATIONSHIP BETWEEN LICHEN RUBER (HEBRA) AND LICHEN PLANUS (WILSON).

The reader compared at length the clinical symptoms, histology, prognosis, and results of treatment of the two affections, and showed that in none of their attributes did they appear alike. He reaches the following conclusions:

(1) Lichen planus and lichen ruber, in doubtful cases especially, are to be diagnosticated not by the form fo the lesion alone, but also by the whole symptoms and course of the eruption.

(2) Lesions resembling those of lichen ruber and lichen planus exist in other diseases.

(3) In the lesions described by Unna, he shows that his division is an incorrect one.

(4) The same is true of Boech's cases.

(5) No cases have been reported that show absolutely, or even with probability, that lichen planus and lichen ruber are but two forms of the same disease.

(6) If such an identity of etiology exist, such cases would long ago have been reported, as lichen planus is a rather frequent disease.

(7) Finally, in the absence of proof by the transformation of the lesion, or difference in symptoms, source, prognosis, histology and effects of drugs, in the two forms of the eruption, we find no grounds for considering lichen planus and lichen ruber identical diseases.

DR. R. W. TAYLOR, of New York, read a paper on

LICHEN RUBER, AS OBSERVED IN AMERICA, AND ITS DIFFERENTIATION FROM LICHEN PLANUS.

The confusion in the identity of the two diseases had arisen from the fact that a case of true lichen ruber was seen at the only time when it looks like lichen planus, and had been included in a series of the latter affection. During the past summer the writer had had an unusually good opportunity of studying a case of the true lichen ruber, and presented a detailed account of the symptoms and lesions, with a series of beautifully colored photographs, and presented a complete differential diagnosis between the two affections. He divided the course of the lesions into three stages: (*a*) isolation of the papules; (*b*) coalescence of the papules; (*c*) chronic infiltrated, pigmented and scaly stage. It is only for a short time, at the end of the first stage, when the papules become flattened, and have not extended over too great a surface of the body, that there should be any danger of the confounding of the two diseases. In the second stage a large portion of the surface of the body is involved, but it is from the formation of separate new papules, and not from the extension of those already formed. In the third stage there is a decided infiltration of the skin, the papular elements gradually disappear, and there is left a uniform brownish-red, slightly scaly superficial thickening of the skin, which is traversed by minute furrows. After resolution a diffuse brownish-red coloration is left, but is much less evident than in lichen planus. Aside from the local manifestations, the course of the two diseases are so entirely different that there should be no confusion between them.

DR. SHERWELL considered it the most important subject that had been brought before the Society for a long time. There seems to be a very general consensus of opinion among American dermatologists as to the difference of the forms. He believed he had seen about two per cent. of lichen, on going over his whole dermatological life. Basing his opinion entirely on clinical studies, he was sure of the non-identity of the diseases.

DR. BRONSON agreed that the pathological anatomy of the lesions was different, and yet if it had been similar that would be a trifling argument in the face of the mass of clinical evidence.

DR. BULKLEY thought there were cases of lichen simplex that Unna had mixed up with lichen ruber. We see these cases again and again. He was particularly impressed with the statement that in lichen planus sometimes patches would form and not progress for a long time. He had known such a patch on the back to persist for months, and then to extend.

DR. ATKINSON thoroughly agreed with the preceding speakers.

DR. HEITZMANN thought the trouble had arisen from the fact that all the cases of these affections were formerly called chronic eczemas.

DR. ROBINSON did not think that the histological examination was of importance, though it showed the difference in the two diseases. He would base his diagnosis upon the sum of all the facts entering into it. There has been shown no tendency for one disease to become changed into the other. The different behavior under treatment is also an important element.

DR. TAYLOR, in summing up the case, could only reiterate his statement as to his hearty belief in the difference between the diseases.

THURSDAY MORNING, SEPTEMBER 20, 9 A.M.

Dr. C. Heitzmann, of New York, read a paper on

KRAUROSIS OF THE VULVA (BREISKY).

He had been shown the case by Dr. Mundé. It was in a woman of thirty-five who complained of fearful itching in the vulva. It was found that Breisky, of Vienna, had seen nine cases, and had not been able to cure any of them. Dr. Weir described a similar case some years ago. There is in these cases a profuse muco-purulent vaginitis, with whitish thickened patches scattered over the mucous membrane. These may be a good deal raised, and feel like parchment. The important subjective symptom is the intense itching. Mental affections sometimes follow.

The reader considered it nothing more than a chronic eczema of the vulva, and found that the cases were curable. It might be mistaken for psoriasis, but that would not be confined to the mucous membrane so long. There was in two cases a uric acid diathesis, and in one oxaluria. The vaginitis seems to be secondary, for it ceases when the local trouble is relieved. The treatment consists in curetting the lesions, and if they cannot be easily reached in this way, nitric acid may be applied. A solution of cocaine may be used to dull the pain. Salicylic acid will remove thickened epidermis. In the case reported by Dr. Weir the final result was the formation of cancer.

Dr. Bronson had seen in a man a papillary growth that reminded him of the cases reported by Dr. Heitzmann. They were exceedingly persistent.

Dr. Sherwell referred to an article he had lately seen in the *Gazette des Hôpitaux*, where five cases of apparently a similar character were reported, though only one was in the vulva, the rest being in the oral cavity. The author prefers the name leucoplasia, rather than kraurosis. These were curetted, and relief was afforded. If left alone they take on an epitheliomatous formation. In one case this happened after forty years.

Dr. Graham asked if the itching presented the local lesion.

Dr. Heitzmann replied that it did not.

Dr. Hyde had seen a case in a widow woman of forty, where there was present the intense itching, and also a marked atrophy of the labia minora.

Dr. Heitzmann was surprised that so few cases had been met with. The condition has nothing in common with leucoplasia of the tongue. Their etiology is utterly in the dark.

Dr. R. W. Taylor read a paper on the

DERMATITIS TUBEROSA — THE SO-CALLED IODIC FORM.

Dermatitis is really the morbid change in every case of eruption following the use of the iodides. Therefore there is but one eruption, which may show itself in various ways. In the case reported the iodide was given in increasing doses up to eighty grains, t. i. d. The lesions were on the left side of the forehand and face, and the tubercles were sessile, without surrounding inflammation. From the surface pus escaped from cribriform openings. They decreased slowly, and left pigment patches. The sebaceous follicles were inflamed, and at first they looked like acne indurata. The term acne anthracoïde is too fanciful, and far from being precise, for anthrax is a subcutaneous affection. In the bullous form of eruption, the speaker thought the essential lesion was a dermatitis.

Dr. Heitzmann would ask the reader if he had formed any idea as to how the iodine preparations cause such troubles.

Dr. Taylor thought that the trouble was angio-neurotic; the action is carried back to the nervous system, and by that to the bloodvessels. He did not think there was any action on the glands at all.

Dr. Robinson would object to the use of the term dermatitis, as it is applied to so many conditions, and means so little.

Dr. Hyde agreed with Dr. Taylor in regard to the etiology of the affection. He called attention to the fact that iodic purpura always occurred in the lower extremities.

Dr. Morrow had seen some cases of the iodic purpura on the upper extremities. These patients generally had syphilis. He agrees that it is within the sphere of the nervous system that we must look for the explanation of the cause of the eruption.

Dr. Atkinson believed that the action started in the follicles, although the absence of the iodine in the tests, would tend to prove that it is not done by the irritation caused during elimination.

Dr. Taylor upheld the use of the term dermatitis whenever there was an inflammation of the skin, as giving an exact idea of what was taking place.

Dr. L. D. Bulkley, of New York, read a paper on

DERMATITIS PLANTARIS AND PALMARIS.

He had applied the terms advisedly, to signify an affection which consisted of a general exfoliation of the hands and feet, especially of the palmar and plantar surfaces, which was recurrent in its nature. He gave in some detail the history of three cases. In the first it had occurred many times, and the man could predict when an attack was about to occur by a peculiar burning and itching of the parts. Each attack lasted about a week, the nails being always attacked. Sometimes a slight rash appeared over the abdomen, but this was the only lesion outside the extremities. The second case was much like the first, though less severe, and the third, in a woman, was really but one attack which lasted for several months, and then resolved very slowly.

It was necessary to distinguish the first case from dermatitis exfoliativa, which could easily be done by the limited area of the invasion, and the clinical history. It is probable that the cause of the disease must be sought in the nervous system. Treatment is both internal and external, the former directed to the nervous element. The first case was helped by the long-continued use of arsenic. Emollients aid in the recovery. In one of the cases a lotion of borax and glycerine in rose-water kept the skin soft and prevented scaling.

The officers for the ensuing year are: *President*, Dr. J. E. Graham, Toronto, Can.; *Vice-President*, Dr. S. Sherwell, Brooklyn, New York; *Secretary and Treasurer*, Dr. G. H. Tilden, Boston.

The following gentlemen were elected active members: Drs. George T. Jackson, New York; H. G. Klotz, New York; F. J. Shepherd, Montreal; Josef Zeissler, Chicago; William T. Corlett, Cleveland; J. S. Howe, Boston.

The next meeting will be held in Boston, Tuesday, September 17, 1889.

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ON THE EMPLOYMENT OF INHALATIONS IN DISEASES OF THE BRONCHI AND OF THE LUNGS.

THE discussion on the use of inhalations in pulmonary diseases before the British Medical Association, recently held in Glasgow, was one of considerable practical importance. Dr. Theodore Williams remarked that the discovery of the tubercle-bacillus had given a new impulsion to researches on inhalations, and distinguished five forms: (1) inhalations of gases (compressed or rarified air, oxygen, etc.); (2) warm, moist inhalations (vapors); (3) inhalations of pulverized liquids by the spray producer; (4) inhalations of dry vapors; (5) inhalations by means of respirators charged with divers medicinal substances.

The utility of gaseous inhalations is recognized by all who have ever tried them.

Dr. Williams had thoroughly tested, in cases of pulmonary phthisis, the warm, moist inhalations, and had found the results always disappointing. The spray does not probably penetrate farther than the larynx and trachea.

The inhalation of fumes produced by such cigarettes, papers, and powders as are recommended in asthma has always appeared to Dr. Williams inferior in its effects to the administration of the same substances by mouth. He has also tried the respirators charged with medicinal substances. He has not found them productive of much benefit in phthisis; besides, they impede respiration.

In acute bronchitis and in croup, the patient is sometimes benefited by inhalations of warm water, but there is not much reliance to be placed on these alone. In whooping-cough, the violence of the attacks may be diminished by inhalations of phenic acid, which, however, have only a palliative effect, the duration of the disease not being modified thereby. For the cough of phthisis, no inhalation is worth as much as the internal employment of ammoniacal potions or narcotics, with derivation by irritant liniments as an auxiliary.

Dr. Williams stated that he had made trials in phthisis of sprays of iodine and of turpentine. When the iodine spray was used, no trace of iodine was found in the urine; nor, on the other hand, was the characteristic odor of turpentine detected in the urine when turpentine inhalations were used. Dr. Williams sums up his experience by the observation that inhalations are of little or no utility, except in diseases of the larynx and bronchi.

Dr. Andrew Smart, of Edinburgh, said that his experience with inhalations had led him to regard them as valuable auxiliaries in the treatment of pulmonary affections, only they should be used long and perseveringly. He had found acupuncture by a sort of spur-like apparatus with sharp teeth, followed by frictions of croton oil over the chest, of use. Dr. Lindsay, of Belfast, thought that inhalations of vapor of water were often useful in acute bronchitis, but when the patient employs them very assiduously he becomes extremely sensitive to changes of temperature, and convalescence is slow and accompanied by relapses. In phthisis the results of inhalations are absolutely *nil;* no solution fit to be inhaled can destroy the bacillus or modify the individual receptivity, without which the bacillus is nothing. The best treatment of phthisis still consists in improving the general condition by hygienic measures and an appropriate diet.

Dr. Greland was convinced of the efficacy of emanations from certain resinous trees, and had seen good results from breathing the air of pine forests in diseases of the bronchi and lungs. In Birmany and Valachia it is the custom to place consumptive patients in petroleum wells, where they sojourn for a time, and this mode of treatment seems to have been attended with some success.

Dr. Denison, of Colorado, spoke of the advantages in pulmonary phthisis of breathing a cool, dry air, such as prevails in Colorado, and does not favor inhalations of steam or atomized liquids. The results of the dry air treatment in phthisis had been remarkably favorable.

SHORTHAND AS AN AID TO SCIENTIFIC STUDY.

IN looking through a somewhat extended list of announcements of a variety of educational institutions, it is noticeable that in none of them is the study and practice of shorthand in any way alluded to. As a preliminary to a course of classical study in any direction, or as a convenience in any branch of investigation, the practical character of this accomplishment is so evident, its utility as a time-saver is so apparent, that it is truly a matter of surprise that some degree of stress is not laid upon it as a preparation for the pursuit of the higher branches of study. As a useful art, shorthand might almost be compared to the hypothetical "universal solvent" in that it is applicable to any and all the paths of learning which a student can possibly follow.

In our education there is hardly another element of

assistance which can be compared to that of taking immediate and correct notes of any interesting matter which may be passing at the time. In one of the recent meetings of the Institute of Technology one of the gentlemen in addressing the assembly was suddenly stricken with apoplexy, and fell dead before his audience. The fact that one of his listeners was at the time taking stenographic notes of his address enabled the institute to preserve a most grateful record of the last thoughts and utterances of one of the most devoted friends which that noble institution has ever had.

The application of shorthand to the study of medicine is no less important, and should be considered a most valuable adjunct to other measures preparatory to such a course of training. There is also a practical side to this question which as a matter of fact has recently been demonstrated. There is a growing call for medical stenography, which is even now considerably in demand for reporting the proceedings of various scientific societies, and which will surely become more outspoken as the time goes on. Thus we have as a partial inducement for the cultivation of this useful art the fact that a competent medical shorthandwriter, can most probably earn a comfortable livelihood at this time, and will doubtless find increased occupation with the knowledge of the fact that he is a master of the art. Many an impecunious student would doubtless gladly avail himself of this means of income, and would at the same time add materially to the interest in the discussion of scientific subjects, by furnishing reliable and trustworthy reports of exactly what was said and done.

This subject may well receive more attention in the future than it has in the past, as a means not only of assistance to the individual student, for the correct reporting of lectures, etc.; but also as a means of giving the body medical a faithful and accurate report of the transactions which takes place in its meetings, and which must reach the bulk of the profession only through the imperfect medium of print. The late Medical Congress could have furnished employment to a larger number of medical stenographers had their services been offered.

HUMAN BEINGS AS SUBJECTS OF EXPERIMENTATION.

Dr. J. A. Ellegood in a recent article in the *Medical and Surgical Reporter* on the "Germ Theory of Typhoid Fever," proposes in the interest of humanity that "human beings shall be made the subjects of experiment," with a view to ascertaining the causes and best methods of treating infectious diseases, and suggests that "in order to obtain human subjects for experiment, criminals sentenced to capital punishment or for long terms of imprisonment may have their sentences commuted, and that instead of suffering the usual penalty of their crimes, they may become the subjects of experiment for a specified time."

It is interesting to note in connection with this proposition, which modern civilization has evidently not yet progressed far enough seriously to entertain, however much scientific progress might be promoted by such utilization of the criminal classes, that Bulwer in his posthumous romance (or satire) "The Coming Race," pictures a similar custom, whereby inferior and degraded specimens of humanity were by the advanced races sacrificed in the interests of science, as existing among the Vril-ya, in the Utopia which he so felicitously imagines and paints.

MEDICAL NOTES.

— During the past few days the yellow fever at the South has abated materially, and a more cheerful and hopeful feeling has succeeded to the panic of the previous week. The disease seems practically arrested outside of Florida, and only an occasional new focus shows itself in that State, as for instance, at Callahan, September 30th. At Jacksonville, the suffering from privation is still considerable, and the aggregate of new cases daily is large, though not so great as heretofore. On Sunday, the 30th ult., there were 79 new cases reported, 13 of which were whites. Six deaths. Total to that date, 2626. Total deaths, 255.

— The International Congress for Dermatology and Syphilis will meet in Paris at the time of the World's Exposition in 1889, for a week, in the first part of August. The meetings will be held in the large hall of the new museum of the Hospital St. Louis, and will be under the honorary presidency of M. Ricord, and the presidency of Hardy.

— Prince Ludwig, of Bavaria, has just been made "Approbirter Arzt" through the credit of examinations passed in 1869.

— Sir Astley Cooper's ideal of a physician's wife: "She should be like roast-lamb: tender and sweet, and nicely dressed, with plenty of fixings, but with no sauce."

— The yellow fever epidemic in the South has served as a stimulus to non-medical inventors, and some of these have devoted several days of their time to inventing a remedy. Mr. Wiggin, of Canada, is prepared to maintain that the disease is due solely to meteorological conditions or to astronomical conditions, we forget which. Mr. Wiggin, unlike the Pharisees of old, can discern the signs of the times, though he has generally, we believe, failed to discern the face of the sky.

We also learn from the daily press, under date of September 16th, that "since the 15th of this month, Inventor Edison, who is unremittingly engaged in making experiments, has been devoting his attention to the microbe and an efficacious method of its extermination. The result of these experiments has led him to think that he has discovered a remedy for the extermination or effectual check of the yellow fever. The experiments were made with well-known sub-

stances, whose cheapness is the chief claim in recommending them for disinfectants on a wholesale scale. They are gasoline, whose commercial price is about one cent a pound, exhigoline (rhigoline?) which can be bought for sixteen cents, and a ten per cent. solution of caustic soda, made from forty-eight per cent. of the crude material. The cost of the solution is about one-fourth of a cent per pound.

"Said Mr. Edison: 'My experiments have been purely sentimental, and, from the results obtained, *I feel confident that I have at last found a means of stamping out the fever germs* (italics ours). From my observations, I am convinced that the fever germs must be either of two things — animal organization or fungous growth. It is not due to gases, or the whole of a district would be affected at once. I believe that the fever microbe is parasitic, as it travels slowly along the ground, and is known to have been stopped in some cases by street-paving.'"

Mr. Edison goes on to say that his "experiments with microbes have been encouragingly successful, and, not having any of the yellow fever germs to work upon, we can only draw our conclusions by analogy."

His "sentimental experiments" give him a considerable degree of confidence, considering that he has really never had any opportunity to experiment with the disease in question at all. Meantime, as a real germicide, tried not sentimentally, but actually, "what is the matter with" corrosive sublimate?

— From the *Wiener Medical Wochenschrift* we learn that cremation has been received with much favor in Italy. There are already thirty-two associations and committees for its encouragement, and new crematories are to be built this year in Turin, Verona, Bologna, Pavia and San Remo, and in Naples, though the superstitions of the people have led to much opposition. Since 1876 there have been 952 cremations, of which number 518 were in Milan alone, where a second crematory has been built and placed at one end of the public cemetery.

— The dermatologists of Germany will unite in a society, the invitations to membership being sent out by Professors Weisser, of Breslau, and Pick, of Prague.

NEW YORK.

— The new St. Joseph's Hospital at Yonkers, the corner-stone of which was recently laid by Archbishop Corrigan, is to be in the early Gothic style of architecture, and will have a frontage of 180 feet, with a centre building 53 feet wide, flanked by wings 31 feet wide and 93 feet deep. The service of the hospital will include an ambulance corps.

— For three months past there have been cases of small-pox in Buffalo, and of late there has been a considerable increase in their number. Many cases have apparently been concealed, particularly in the Polish district of the city, and in this region no less than a dozen cases were recently discovered in a single tenement-house.

— The thirteenth annual commencement of the Training School for Nurses of Charity Maternity, and Infant's Hospitals on Blackwell's and Randall's Islands was held in the amphitheatre at Charity Hospital September 26th. There were twenty-two graduates, and addresses were made by the Rev. John W. Brown, D.D., Rector of St. Thomas's Church, Dr. Henry Goldthwaite, visiting surgeon to Charity Hospital, and others.

Miscellany.

DIPHTHERIA IN THE INSANE HOSPITAL.

UNFORTUNATELY diphtheria was introduced into the Maine State Insane Hospital in the latter part of June, and, as is often characteristic of that disease, it shows a tendency to reappear again and again after it is hoped that it has been stamped out. The introduction of the infection seems to have been as follows: A young man whose home is in Vassalboro', returned to that place from New York, June 15th. Two weeks afterward he was attacked with a rather severe throat disease from which he suffered four days, June 17th to the 20th. He had no medical attendance, but kept his bed two of the days. On the 21st he went to the Hospital as an attendant. On the 24th or 25th his brother, who had been with him at home, was attacked with diphtheria and was attended by a physician. The first cases of diphtheria at the Hospital occurred a few days after the arrival of this nurse from Vassalboro', and the most of them, if not all, had come in contact with him. At the time of the present writing there have been eighteen cases among the patients and attendants, including two questionable cases. Five of these have proved fatal. One of the fatal cases occurred in a maniacal patient. Others have been complicated with other diseases which have had as much to do with the fatal issue as the diptheritic attack. The later cases have been mild and no recent deaths have occurred. Very careful measures of isolation and disinfection are in operation, and it is hoped by the management that the outbreak may soon be at an end.— *Sanitary Inspector*, (August number).

A SYSTEM OF FREE NURSING AS ORGANIZED IN PHILADELPHIA.

DR. JOSEPH PRICE, of Philadelphia, published an article on the above subject in the *Journal of the American Medical Association*, from which the following is extracted:

The Visiting Nurse Society, of Philadelphia, was organized a little over two years ago by a few charitable ladies of this city for the purpose, as their charter reads, "of furnishing visiting nurses to those unable to secure skilled attendance in time of illness, to teach cleanliness and the proper care of the sick." It is supported by voluntary contributions and such small amounts as the patients may be able to pay, and its last report shows a remarkable amount of practical benevolence secured by the outlay of a very small sum of money. The society in the beginning employed a trained nurse with one or two assistants, who were also pupils. Additional nurses were employed as necessity arose until the staff now consists of seven

nurses and assistants and one maternity nurse whose work is confined to that specialty. Special nurses are provided for contagious diseases as they may be required, the regular staff not coming in contact with such cases.

"In cases demanding immediate operation these nurses make all preparations at the shortest possible notice; namely, thorough cleansing of the room and person of the patient, often supplying fresh body and bed linen, one or more nurses to assist in the operation, and one to care for the patient during the subsequent treatment. I have known these nurses to go in an attic or cellar in the heart of the slums of the city, the rooms reeking with filth and overrun with vermin. The patients, fit inhabitants of their homes, destitute of the bare necessities of life, not having even a receptacle in which to boil water, and often dependent on their neighbors for food and fuel. In a few hours the nurses have cleaned the room, supplied the necessary furniture and utensils and prepared the patient for an abdominal section. With such an organization at his command the physician or surgeon has no reason to fear undertaking any case, surgical or medical, at the homes of even the poorest of patients. In the clinic of the female department of the Philadelphia Dispensary, for years I did not attempt to do any of the abdominal work that constantly presented itself because of the lack of such a free system of trained nurses.

"Since the organization of this Society we have done over ninety abdominal sections in the alleys and courts of this city, with only one death. And these were not selected cases, but were done because they were imperative. In addition, many general operations of more or less severity, but requiring skilled nursing, have been performed, and in every case the nurses of this Society have proved themselves equal to the occasion. During the past year the Society has cared for 90 surgical cases, out of a general list of 369, necessitating nearly 6000 visits. So far during this year they have attended nearly 200 cases, of which 50 per cent. were surgical."

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 22, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	682	315	28.05	10.95	13.35	2.55	3.75
Philadelphia	1,016,758	329	127	19.80	—	8.10	6.90	2.10
Brooklyn	751,432	376	204	32.40	10.53	18.63	1.89	4.59
Chicago	760,000	273	135	29.88	9.12	15.48	2.88	6.84
St. Louis	449,160	177	75	17.36	7.84	—	1.12	6.72
Baltimore	437,155	147	70	20.40	—	13.60	2.72	1.36
Boston	407,024	205	94	23.52	14.21	15.68	2.94	4.41
Cincinnati	325,000	106	—	9.43	—	3.76	—	3.84
New Orleans	248,000	120	36	29.05	5.25	2.80	1.05	4.90
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	103	45	28.13	18.43	12.68	3.88	2.81
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	19	9	42.08	15.78	21.04	5.26	—
Charleston	60,145	—	—	—	—	—	—	—
Portland	40,000	20	5	25.00	15.00	10.00	—	15.00
Worcester	76,328	41	21	39.04	34.16	—	2.44	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	35	21	31.46	2.86	20.00	5.72	—
Fall River	61,203	30	16	29.99	6.66	23.33	3.33	3.33
Lynn	51,467	13	—	7.69	23.07	7.69	—	—
Lawrence	40,175	13	8	23.07	—	23.07	—	—
Springfield	39,952	12	5	41.65	8.33	—	16.66	—
New Bedford	36,298	23	9	18.40	—	18.40	—	—
Somerville	33,307	15	—	46.66	—	26.66	13.33	6.66
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	10	6	10.00	10.00	—	10.00	—
Chelsea	27,552	9	6	11.11	11.11	11.11	—	—
Haverhill	24,979	11	6	27.27	18.18	27.27	—	—
Taunton	24,796	12	2	33.33	8.33	8.33	8.33	—
Brockton	24,784	11	3	27.27	18.18	—	9.09	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	8	3	37.50	12.50	25.00	12.50	—
Malden	18,932	6	2	—	—	—	—	—
Fitchburg	17,534	6	2	—	16.66	—	—	—
Waltham	16,651	6	4	16.66	16.66	16.66	—	—
Newburyport	13,839	7	4	28.56	28.56	28.56	—	—
Quincy	13,336	4	2	50.00	25.00	—	—	—

Deaths reported 2,829: under five years of age 1,235; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 725, consumption 243, acute lung diseases 175, diarrhœal diseases 358, diphtheria and croup 119, typhoid fever 87, whooping-cough 50, malarial fever 43, scarlet fever 28, measles 14, cerebro-spinal meningitis 10, puerperal fever eight, erysipelas three, small-pox one. From whooping-cough, New York 21, Brooklyn 10, Philadelphia and Washington six each, New Orleans three, Chicago, St. Louis, Baltimore and Cambridge two each. From malarial fevers, St. Louis 14, Brooklyn 11, New York and New Orleans seven each, Baltimore two, Philadelphia and Nashville one each. From scarlet fever, New York 15, Brooklyn and Chicago four each, Taunton two, Philadelphia, Nashville and Brockton one each. From measles, New York 11, Chicago two, Brooklyn one. From cerebro-spinal meningitis, Quincy two, New York, Philadelphia, Chicago, Washington, Nashville, Worcester, Springfield and Brockton one each. From puerperal fever, Chicago four, St. Louis, Boston, Washington and Springfield one each. From erysipelas, New York, Brooklyn and Washington one each. From small-pox, Springfield one.

The meteorological record for the week ending September 15, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Sept. 15, 1888.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	Duration: Hrs. & Min.	Amount in Inches.
Sunday,....9	29 98	70.0	74.0	68.0	90.0	83.0	86.0	S.W.		S.W.	12		7	O.		O.	7.35	.08
Monday,..10	29.94	68.0	80.0	65.0	93.0	55.0	74.0	W.		W.	9		5	O.		C.	7.00	1.09
Tuesday,..11	30.16	62.0	68.0	58.0	68.0	79.0	74.0	N.		S.	6		5	O.		O.		
Wednes,..12	29.86	63.0	66.0	58.0	100	82.0	91.0	N.		S.	10		7	R.		C.	10.00	.51
Thursday,.13	29.94	62.0	72.0	57 0	70.0	56.0	63.0	W.		W.	10		13	F.		C.		.05
Friday,...14	30.14	58.0	71.0	46.0	60.0	56.0	58 0	W.		W.	21		6	C.		C.		
Saturday,.15	30.31	60.0	63.0	51.0	67.0	74.0	70.0	N.W.		S.	5		12	C.		C.		
Mean, the Week.																		

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FROM SEPTEMBER 22, 1888, TO SEPTEMBER 28, 1888.

WHITE, ROBERT H., major and surgeon U. S. A. Is granted leave of absence for one month, with permission to apply for an extension of one month. Paragraph 7, S. O. 199, Headquarters Division of the Atlantic, Governor's Island, New York City, September 22, 1888.

WOODRUFF, EZRA, captain and assistant surgeon. Is granted leave of absence for six months on surgeon's certificate of disability, with permission to leave the Division of the Missouri, by direction of the acting Secretary of War. Paragraph 5, S. O. 223, A. G. O., September 25, 1888.

STERNBERG, GEORGE M., major and surgeon U. S. A. Will proceed to Decatur, Ala., and to such other points in the infected districts of the Southern States as he may deem necessary, to continue his scientific investigations of yellow fever, by direction of the President. Paragraph 8, S. O. 224, A. G. O., Washington, September 26, 1888.

MATTHEWS, WASHINGTON, captain and assistant surgeon. Is detailed as a member of the Army Medical Examining Board, appointed to meet in New York City, October 1, 1888, by S. O. No. 203, September 1, 1888; from this office, *vice* GEORGE M. STERNBERG, major and surgeon, hereby relieved from his detail as a member of the Board. Paragraph 3, S. O. 224, A. G. O., Washington, September 26, 1888.

HOFF, J. VAN R., captain and assistant surgeon. Upon the recommendation of DANIEL WEISEL, captain and assistant surgeon, senior medical officer camp of instruction of the 5th Cavalry, is assigned in charge of active operations of the Hospital Corps in that camp. Paragraph 2, S. O. 121, Headquarters Department of the Missouri, Fort Leavenworth, Kansas, September 22, 1888.

WILSON, GEORGE F., captain and assistant surgeon. Is granted leave of absence to include May 3, 1889, by direction of the acting Secretary of War. Paragraph 14, S. O. 223, A. G. O., September 25, 1888.

WILSON, GEORGE F., captain and assistant surgeon. The resignation has been accepted by the President to take effect May 31, 1889. Paragraph 15, S. O. 223, A. G. O, September 25, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING SEPTEMBER 29, 1888.

HUDSON, ADRIAN, medical inspector. Ordered for examination preliminary to promotion to medical director.

BATES, NEWTON L., medical inspector. Ordered for examination preliminary to promotion to medical director.

COOKE, GEORGE H., surgeon. Ordered for examination preliminary to promotion as medical inspector.

BRADLEY, MICHAEL, medical inspector. Ordered as member of Naval Examining Board.

WELLS, HENRY M., medical inspector. Relieved from duty as member of Naval Examining Board.

SIMONS, MANLY H., surgeon. Ordered to Widow's Island Naval Hospital.

HEFFENGER, A. C., passed assistant surgeon. Detached from Naval Hospital, Widow's Island, and wait orders.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — THE SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE will meet at 19 Boylston Place on Wednesday, October 10th, at 7.45 o'clock. Papers: Dr. F. M. Stuart "Syphilis or Tuberculosis?" Dr. Douglas Graham, (Subject to be announced). Dr. Henry I. Bowditch, "The Need of a National Board of Health." Messrs. Leach & Green will exhibit a number of new instruments.

ALBERT N. BLODGETT, M.D., *Secretary.*
A. L. MASON, M.D., *Chairman.*

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. —A regular meeting of the Society will be held Monday, October 8th, at the Medical Library, 15 Boylston Place. Reader: Dr. E. G. Cutler; Subject: "Fæcal Accumulation." Dr. M. H. Richardson will report "A Case of Ulcerative Perforation of the Transverse Colon; Laparotomy; Death at the End of Six Days."

F. B. HARRINGTON, M.D., *Secretary.*

DEATH.

Died in Medford Mass., October 1, 1888, William Jerome Klinghammer, M.D., M.M.S.S., of Roxbury, aged thirty-one years eight months.

BOOKS AND PAMPHLETS RECEIVED.

Surgery as a Science and an Art. By Geo. E. Frothingham, M.D., Ann Arbor, Mich. Reprint. 1888.

Essays on Hysteria, Brain Tumor, and some other Cases of Nervous Disease. By Mary Putnam Jacobi, M.D. New York and London: G. P. Putnam's Sons. 1888.

Transactions of the Medical Society of the State of Pennsylvania at its Thirty-Ninth Annual Session, held at Philadelphia, June, 1888. Vol. XX. Published by the Society.

A Text-Book of Human Physiology. By Austin Flint, M.D., LL.D., Professor of Physiology and Physiological Anatomy in Bellevue Hospital Medical College, New York. etc. With 316 figures in the text and two plates. Fourth edition, entirely rewritten. New York: D. Appleton & Co. 1888.

A Manual of General Pathology; Designed as an Introduction to the Practice of Medicine. By Joseph Frank Payne, M.D., Oxon., F.R.C.P., late Fellow of Magdalen College, Oxford, etc. With 150 illustrations. Philadelphia: Lea Brothers & Co. 1888.

A Text-Book of Pharmacology, Therapeutics and Materia Medica. By T. Lauder Brunton, M.D., D.Sc., F.R.S., Fellow of the Royal College of Physicians, etc. Adapted to the United States Pharmacopœia, by Francis H. Williams, M.D., Boston, Mass. Third edition. Philadelphia: Lea Brothers & Co. 1888.

Thirty-Third Annual Report upon the Births, Marriages and Deaths in the City of Providence, for the year 1887.

The Morbid Anatomy of Congenital Talipes Equino-Varus. By J. B. Bissell, M.D., Instructor in Orthopædic Surgery in the New York Polyclinic; Attending Surgeon Bellevue Hospital, Out-Door Poor Department Reprint. Philadelphia: J. B. Lippincott Company. 1888.

Electricity *vs.* Tait; or, the Use of Electricity in Inflammation as found in Gynæcology. By George F. Hulbert, M.D., late Superintendent of Female Hospital, St. Louis. Reprint. 1888.

Original Articles.

THE COMPARATIVE MERITS OF TRACHEOTOMY AND INTUBATION IN THE TREATMENT OF CROUP.[1]

BY GEORGE W. GAY, M.D.,
Surgeon to Boston City Hospital.

Dr. Joseph O'Dwyer's method of intubing the larynx for croup, which has engaged the attention of the profession for the past few years, is slowly but surely crystalizing into its proper place as an important adjuvant to tracheotomy. The novelty and boldness of the method are so striking, that many surgeons whose experience had made them familiar with the old operation hesitated, and very properly hesitated, to accept the new one, until careful and repeated trials had demonstrated its value to a reasonable extent. That stage in its career has now been reached. There can be no doubt that it relieves dyspnœa; that it saves life; that it is a reasonably safe operation to do; and that in the majority of instances, it is more easily performed than tracheotomy. Hundreds of cases of intubation have now been put upon record, and the results are fairly satisfactory. The immediate relief to the dyspnœa may not, in the severe cases be as complete, as it is after the old operation, yet it is usually sufficient for all practical purposes. Intubation has met with opposition, but in spite of its dangers and inconveniences, from which no method of treating these affections is free, its advantages are gradually forcing themselves upon the profession, as experience becomes more extensive. The operation calls for much patience and perseverance in the after-treatment, more especially in the feeding of the child, and for this reason, if for no other, the surgeon should hesitate to pass a final opinion upon its merits, until he has seen a goodly number of cases. It will be the object of this brief paper to set before you, as clearly as I am able, the advantages and disadvantages of the two methods of relieving the dyspnœa arising from acute membranous laryngitis.

In considering this subject the first point to engage our attention is the comparative results of the different modes of treatment. Which operation saves the more lives? All other questions are secondary to this one. If it appears from experience, that intubation saves as many, or about as many patients, as tracheotomy, then, whatever may be its dangers or its disadvantages, it justly claims a careful and thorough trial at the hands of all, who are called upon to treat this most serious affection.

Statistics are proverbially unsatisfactory, and at times they are positively misleading; yet in trying to decide the question at issue more or less dependence must necessarily be placed upon them. Agnew, Lovett and Munroe, Mastin, Stern, and others have given us the results of many thousands of cases of tracheotomy, and while the rate of recovery varies greatly in the different groups, yet a fair average may be put at about twenty-eight per cent. One of the latest, as well as the largest collection of statistics of this operation was very carefully made last year (1887) by Drs. R. W. Lovett, and John C. Munroe,[2] formerly house-surgeons at the Boston City Hospital. They collated nearly 22,000 cases from every available source, taking especial care to avoid duplication. As a rule they rejected all groups of cases under five, and mostly those under ten, "for the reason," as they say, "that recoveries predominate enormously in the very small groups." "It was considered that to count such groups would be misleading, and they were all rejected, whether favorable or not, because they were not considered representative." Twenty-eight per cent. of these cases resulted in recovery. The percentage of recoveries in Agnew's[3] cases was 26%, as was also that in Monti's collection. Dr. Wm. M. Masten has gathered 860 operations from American sources. Of these 195 were saved (22%). The following American statistics are not included in Masten's tables. H. Z. Gill,[4] reports 151 tracheotomies performed in Illinois, with 38 recoveries (25%). In over 100 tracheotomies Dr. John H. Ripley, of New York, saved 33%. Dr. C. G. Jennings, of Detroit, has had 18 successful cases in 37 operations, Dr. C. T. Parkes,[5] has had 18 recoveries in 31 cases. My own cases of tracheotomy for croup amount to 103. Of these 35 recovered, (33%).

Previous to January, 1887, which was about the time of the introduction of intubation into our city, 327 tracheotomies had been performed at the Boston City Hospital.[6] Most of these cases had occurred since 1880. 95 patients recovered, making the rate 29%. Since intubation has come into vogue in that institution, 57 patients have been tracheotomized, but only 7 have recovered. This high death-rate is due to the fact, that as a rule, only the severest cases, or those in which the new operation failed to give relief, were subjected to the old method. Of these 57 patients 27 were under 3 years of age; 25 died.

It is a well-known fact that children suffering from croup are seldom sent to a hospital, until all measures, other than surgical have been fairly tried. The hospital being the last resort, the patients are often in a most deplorable condition upon their arrival, and are very unpromising subjects to undergo any sort of treatment. It has always been the rule in the City Hospital to insert a tube, or at least to make the attempt, in every instance however desperate the condition of the patient might be. Such being the fact the results of the operation as given above are reasonably satisfactory.

Dr. O'Dwyer thinks that the published records of the results of tracheotomy are too highly colored; that the operation is not as successful as the literature upon the subject would lead one to suppose. He says "that, with rare exceptions, only the few operators who have good results publish their cases, which is a mere bagatelle compared with the whole number operated on."[7] If this be true in relation to tracheotomy, it is difficult to understand why the same statement may not be made in regard to intubation. Both operations are resorted to for the same affection, oftentimes under similar conditions and by the same operators, and, so far as experience has taught us, the results of intubation are not so uniformly successful as to preclude the possibility of silence on the part of timid or sensitive practitioners.

From careful inquiries, and from my personal

[1] Read before the American Surgical Association, Washington, D.C., September 20, 1888.
[2] American Journal Medical Sciences, July, 1887.
[3] Max. J. Stern, M.D., Medical Register, November 12, 1887.
[4] Annals of Surgery, April, 1881.
[5] American Lancet, November, 1886.
[6] Lovett and Munroe, op. cit.
[7] Medical Record, Oct. 29, 1887.

knowledge of the matter, I feel justified in stating that from one-fourth to one-third of the tracheotomized patients in Boston and vicinity recover. Applying this statement to the subject at large, I think that reliable statistics will warrant us in accepting it as a fair conclusion of this part of our inquiry.

Such being the record of tracheotomy, what is the verdict of about three years' experience with intubation? Dr. O'Dwyer,[8] whose skill in inventing, and whose perseverance in developing and perfecting the operation are worthy of all praise, has performed it 205 times. Forty-seven patients got well. It is but fair to state that 65 of these operations were done during the experimental stage of the method with various kinds of tubes, and upon foundlings, who were in a very unfavorable condition to withstand the disease. Omitting these cases, and his record stands thus: operations, 140; recoveries, 38 (27%). Dr. Dillon Brown writes me that he has performed the operation 190 times, and has had 51 recoveries (26%). He operates late, when the symptoms are severe, and only after a thorough trial of other measures has been made. Dr. F. E. Waxham[9] has operated upon 150 patients, 41 of whom recovered (27%). He has collected 1,072 cases of intubation, showing a rate of recovery of 27%. Dr. Frank Huber[10] has intubed 91 patients; 37 were saved (39%).

Dr. Stern[11] has collected 953 cases, of which 252 (26%) recovered. Dr. E. Fletcher Ingals[12] has brought together 514 cases, most of which had never been published; 134 were successful (26%). Intubation was first done at the Boston City Hospital in December, 1886. With varying results, it has grown in favor, and is now the accepted mode of treatment for the majority of cases of croup. It has been performed in that institution 107 times for this affection; 26 patients recovered (24%). The ages ranged from seven months to fourteen years. The youngest, who recovered, was nineteen months old; she wore the tube more or less for sixteen days. The oldest was ten years, but, as she wore the tube only one day, the case must be considered a light one. Another patient, aged twelve years, was relieved for a short time by the laryngeal operation, but tracheotomy was finally necessitated to ease the dyspnœa. She died in a week from bronchial croup and septicæmia. In ten instances both operations were performed; all were fatal. They were desperate cases, accompanied with a good deal of exudation and sepsis.

The ages of 92 cases of intubation at the City Hospital were as follows:

	Number.	Recovered.	Per cent.
Under one year,	1	0	..
1 to 2 years	12	1	8
2 to 3 "	13	3	23
3 to 5 "	35	10	28
5 to 7 "	20	8	40
7 to 14 "	11	4	36

Total Number 92, with 26 Recoveries.

In 13 cases the age was not given, but the patients were all young; they were in the last stages of the disease when admitted, and they all died. It will be noticed that the ratio of recoveries gradually increased with the age of the child up to seven or eight years, when it began to diminish. Such was the fact in 1,600 cases of tracheotomy collected by Lovett and Monroe[13] from Cohen, Masten, and others. From 20% in children under two, the percentage ran up to 40% at eight years of age. A similar result obtains in the 327 tracheotomies at the City Hospital.

The results of intubation in the experience of different operators presents as great a variation as do those in tracheotomy. While O'Dwyer, Brown, and Waxham save about 1 in 4, Huber and Montgomery[14] save 1 in 2; O'Shea and Van Fleet save 1 in 3; Northrup and Denhard 1 in 5, Jennings 1 in 10, Cheatham 1 in 15, and A. B. Strong 1 in 31.

If the statistics of either operation prove anything, it is that the type of the disease determines to a great degree the result of treatment. The light cases will get well, and the worst cases will die after either operation.

It is claimed that more patients under three years of age recover after intubation than after tracheotomy. Waxham gives 52 cases, with 13 recoveries (25%); Huber[15] 49 cases, of which 17 were successful (34%). In Dr. O'Dwyer's 100 cases in private practice, 35 were under three, and 5 recovered (14%). Stern has analyzed 519 cases of intubation under three and one-half years of age, and finds that 23% recovered. Comparing these results with 1,300 tracheotomies reported by Bourdillat, he finds that intubation gives more recoveries under four and a half years, after which period the old operations appear to be more successful.

Twenty-nine of the 107 City Hospital cases of intubation were under three years of age. Of this number, 4 recovered (13%) — an experience which corresponds very closely with O'Dwyer's. It is a singular fact that in 83 tracheotomies under three performed in this institution, the ratio of recovery was nearly the same; namely, 12%, there being 10 successful terminations. Masten reports 32 tracheotomies under three years, with 5 recoveries (16%). While the weight of evidence at present tends to substantiate the claim of the superiority of intubation in young children, further experience is desirable before the question can be considered as definitely settled.

To recapitulate: Dr. O'Dwyer with a modesty and scientific candor worthy of emulation gives us his experience with the new operation, (would that he had given us his results with the old one), and wisely awaits the verdict, which time and further trial will surely render. Waxham thinks that more young children, and as many older ones recover after the new method. Stern reports the percentage of success as about the same from both operations; namely, 26%. Sajons[16] thinks that the old method is the more successful. "Skilled tracheotomy will, I believe, save more cases than intubation, but the operators seem to be few who can obtain the best results." "I think tracheotomy will save every case that intubation can, and a great many more."[17]

Three hundred and twenty-seven cases of tracheotomy, and one hundred and seven cases of intubation performed at the Boston City Hospital, show but a small difference in the results, (five per cent.). So far, the old method has the larger ratio of success, but the number of intubations is not yet large enough to

[8] Correspondence.
[9] Intubation of the Larynx, p. 105.
[10] Correspondence.
[11] Op. cit.
[12] N. Y. Medical Journal, July 2 and 9, 1887.
[13] Op. cit.
[14] Stern, op. cit.
[15] Correspondence.
[16] New York Med. Journ., July 23, 1887.
[17] C. G. Jennings. Trans. Mich. Med. Soc., 1887.

definitely determine the relative value of the two operations in saving life. I trust that I may be pardoned for quoting the following remarks from one of Dr. O'Dwyer's letters in relation to this matter: "From the large number of cases of croup treated at the Boston City Hospital, it certainly affords the best opportunity for the study of this disease to be found anywhere in this country. When you shall have accumulated the same number of intubations, that you have had tracheotomies, it will settle the question of the comparative methods of the two operations in saving life, better than thousands of cases collected from various sources."

It may appear to some that sufficient evidence has not yet been accumulated to definitely settle the point at issue, but I think that after making due allowance for that enthusiasm, which naturally attends a new and important surgical procedure, the facts available at present go to show, that nearly, if not quite, as many patients recover after intubation as after tracheotomy. This is a triumph for the new method which ought to please even its most ardent admirers.

It having been shown by the most reliable facts and figures at hand that intubation is reasonably efficient in relieving dyspnœa, and in saving life, several other points now present themselves for consideration, and among them is the comparative ease and facility of performing the operation itself. It is undoubtedly true that as the new method does not require the knife, nor an anæsthetic, permission to do it is more readily given. For these reasons an earlier interference is practicable, thereby conserving the strength of the child. It is difficult to understand the assertion made by some writers, that it is an easy operation to perform. "You will find no difficulty in doing intubation," says one. "The child is swathed, the gag is in, the tube is in, the thread is out, the gag is out, and the relieved and bewildered child is looking about, coughing, and quite unable to comprehend the surroundings." [18] This is a brilliant picture, and while it may be true in numerous instances in the hands of an expert, yet very many physicians, who will be called upon to do the operations, are not experts, and to them the above assertions will be misleading. O'Dwyer's remarks upon this point would seem to be more in accordance with common experience. "Nothing could be more erroneous than the prevalent opinion, that it is an easy matter to place a tube in the larynx or remove it, but I am satisfied that a single trial will serve to convince most persons of this fact." [19] Hence the importance of practising the method upon the cadaver.

Intubation is often a difficult operation to perform upon patients under three, or over twelve or fourteen years of age, and at any age if the epiglottis and neighboring structures are much swollen and infiltrated. In young children the space in which the necessary manipulations take place is limited, the larynx is small, deep and movable, and made more so by the struggles of the patient. In adults it is difficult to reach the top of the larynx with the forefinger, except when they try to vomit or cough or swallow. During these efforts the larynx is raised sufficiently to be felt, and a quick, dextrous motion will usually carry the tube to its destination. If the parts are extensively infiltrated and thickened, it is by no means easy to determine the different structures by the touch, while the exhausted condition of the patient often demands, that the least possible amount of time shall be consumed in placing the tube. Several fatalities have occurred under these circumstances, and unless one is reasonably familiar with the operation, and can do it quickly without using force, a careful tracheotomy would probably be a safer procedure. A moderate experience will enable most surgeons to do the operation with comparative ease and facility, except under the conditions above mentioned, but whoever thinks that intubation consists in simply sliding a tube down the throat, as he would a sponge probang, will probably have ample reason to change his mind before he has operated upon many young, or upon many very sick children.

In doing this operation one fact should always be borne in mind, and that is, that no force is required to enter the larynx. If the tube does not pass along easily, then the direction is wrong. O'Dwyer mentions two cases in which the autopsy revealed a perforation of the walls of the larynx from too great force. A cool head, steady nerves, and gentle manipulations are essential to a proper performance of this operation.

It is often more difficult to remove than to introduce the O'Dwyer tube: The calibre is small, the inner surface coated with secretion, making it slippery and difficult to hold, the larynx is deep and movable, which added to the struggles of the child, make the manipulation anything but easy. Care is to be taken that the forceps be not opened till they have entered the tube, as the larynx is liable to be lacerated.

Tracheotomy, like intubation, may be easy or difficult according to circumstances. Every one knows how difficult it is to do in young and fat children, as the trachea lies deep in the neck, is small, soft and movable, the veins are large and tortuous, and hæmorrhage is likely to be free, thus obscuring the parts and delaying the surgeon. Under these circumstances intubation is undoubtedly the better procedure in a majority of cases. Should the patient be greatly prostrated from sepsis or other cause, both operations are attended with danger, and the physician would do well to select the one with which he is the most familiar.

For several years I have discarded sulphuric ether as an anæsthetic in tracheotomy. It produces congestion of the mucous membrane and an increased secretion to such an extent as to increase the dyspnœa in many instances to a dangerous degree; spasm of the glottis is also likely to follow, thus adding another element of embarrassment to a condition already sufficiently grave. Chloroform usually acts very kindly in these cases, and unless the child is unconscious, or partly so, it is my custom to give a few whiffs — just enough to benumb the incision in the skin. After that is divided, this operation is attended with little pain, and is better completed without further anæsthesia, thereby lessening or entirely avoiding shock. With plenty of assistance, the operation can be satisfactorily done without any anæsthetic.

Tracheotomy can be done with the aid of one good assistant. Intubation requires, at least, two. If the operator cares for the integrity of his left forefinger, he will see to it that the gag is intrusted to a reliable person, to one who will not allow it to be displaced by the tongue, or in the struggles during the brief period of suffocation while the tube is being placed. Ingals mentions a case of diphtheria in a physician contracted

[18] W. P. Northrup, M.D. Medical Record, December 11, 1886.
[19] O'Dwyer. Medical Record, December 11, 1886.

from a bite, which proved fatal. A patient can be quieted with chloroform during tracheotomy, but, in doing the new operation, reliance must be placed upon the strength and steadiness of the assistants. In an emergency, the old operation can be done with less aid than the new, but to do either comfortably, the same help is required in the one as in the other.

As time goes on, it will probably be found that as many patients perish while undergoing the new operation as the old. The dangers in tracheotomy are collapse and hæmorrhage, and yet the deaths which occur upon the table are not common. Ten of the City Hospital cases proved fatal in that manner. "Two of these evidently died of heart-failure, for they stopped breathing before the trachea was opened, and had but slight hæmorrhage. Four had profuse hæmorrhage, and two died of shock some little time after the tube was put in place and everything seemed favorable. In the remaining two cases the records are not full."[20]

The most serious accident liable to occur during intubation is the obstruction of the tube or trachea by dislodged membrane or other secretion. Fortunately, it is not a common occurrence, but it calls for prompt action to save the patient. The tube is to be removed, and unless the efforts of nature are sufficient to clear the air-passages, the trachea should be opened at once and artificial respiration resorted to if necessary. In fact, the new operation should not be undertaken in severe cases of membranous croup without having the facilities for tracheotomy at hand for an emergency.

To one not familiar with the new method, the rapid respiration, 60 to 80 per minute, sometimes present might seem to be due to the small calibre of the tube. Such, however, is not the fact in my experience, as I have done tracheotomy under these circumstances without making the slightest difference in the rapidity of the breathing. This symptom means bronchial croup or pneumonia, and is not due to lack of space in the tube of either kind.

Some difference of opinion exists in the profession as to the amount of care and skill required in the after-treatment of intubed patients. I suppose no one will question the desirability of having skilled assistance at hand for three or four days after both operations, but in very many instances this is impossible. The points to be decided are, what operation should be done in cases where the after-treatment must be left principally to a nurse or to persons with ordinary tact and ability, and what one is to be chosen when the tube can receive no attention of consequence. In well-appointed hospitals, where reliable aid is always available, these questions are of less importance than in sparsely settled districts, or when the patient lives miles away from a physician or other competent assistance. The tracheotomy tube always requires more or less care to keep it clear, but any one of ordinary tact can soon learn to do it by means of feathers, straw, installations, and so on. In an emergency, the string may be cut, both tubes removed, and the wound kept patent by means of a dilator until the obstruction is relieved.

On the other hand, while the O'Dwyer tube is much less liable to become filled up, yet it does "gum," or it is suddenly occluded in some cases, and, unless it is coughed out, it must be removed and cleaned. Of course, no one can do this unless he has had some training and experience. Herein lies one of the dangers of this method. If the patient cannot relieve the dyspnœa by ejecting the tube, he must bear it as best he can till help arrives. Death occasionally takes place under these circumstances. Whether the obstruction be slow or sudden, an ordinary attendant can take care of a tracheal tube, but not of the laryngeal.

The testimony of one of our best nurses, who has had a good deal of experience in taking care of both classes of cases, is interesting in this connection. She says: "In a hospital, or wherever a physician is within easy call, I had rather take care of intubations. Under the opposite conditions, I should feel safer with tracheotomy." The reason for this is that it is sometimes necessary to replace the O'Dwyer tube immediately to prevent suffocation. This is especially true in septic children.

In cases where the tube can receive no attention whatever, as among the very poor, etc., intubation is probably the better procedure. Some risk must be taken under these circumstances, and as the danger from sudden or gradual obstruction is not very great after the new method, this would seem to be the best one for the occasion.

As to the relative amount of work and care involved in the after-treatment of the two operations, it may be said that a good nurse will find plenty to do after both. "The time we used to spend in taking care of the tracheal tube is now occupied in feeding the children; but, on the whole, it is less work and more agreeable to take care of intubations." So says the nurse above referred to, and the testimony of the house-surgeons is all in the same direction.

In many instances it requires great tact, patience, and perseverance to give intubed children sufficient nourishment. Liquids choke them more or less, and too often they have no appetite for solids. Occasionally a child gets frightened, and refuses to make an effort to take anything, in which case tracheotomy is advisable. Soft solids, like ice cream, mush, eggs, etc., are valuable articles of diet under these circumstances, and something can be done by means of nutritive enemata.

Rarely is there any difficulty met with in feeding tracheotomized children. In the very sick there may be a total want of appetite for even liquids. The power to swallow is also occasionally impaired by paralysis of the muscles of deglutition, which allows the fluids to return from the nose, or even to enter the trachea, and find exit through the tube. This seldom occurs except in very septic cases, and even then it is far from common. As a rule the power to swallow is not interfered with by tracheotomy.

A great deal has been said and written about "food pneumonia," and other affections caused by the entrance of food to the lungs, via the laryngeal tube. It is true that patients cough and choke a good deal while taking liquids, but at the autopsies pathologists do not find any evidence of food in the finer bronchi. Dr. Northrup,[21] has reported 107 autopsies made at the New York Foundling Asylum, in which special attention was paid to this point, and no evidence whatever was found to show that the extension of the disease was due to the presence of a foreign body, such as milk or other food. Surely if a hundred post-mortem examinations made with reasonable care and intelligence do not reveal the existence of this alleged

[20] Lovett and Monroe. Op. Cit.

[21] Medical Record, December 11, 1886.

condition, that question may be considered settled for the present.

It is a well-established fact, that in a large proportion of the fatal cases of croup, death is due to an extension of the disease to the deeper air passages producing bronchial croup or pneumonia. It has been claimed that intubation would prevent this complication to a great extent, for the reason that the air thus gains entrance to the lungs through the natural channels. Experience does not, as yet, seem to substantiate that assertion. In 50 of O'Dwyer's 73 fatalities death was due to an extension of the disease. Of the 109 deaths reported by Waxham, 69 perished in this manner. The cause of death in the majority of fatal cases of intubation at the City Hospital was bronchial extension. In fact they died from the same causes, in the same manner, and in about the same time after the new operation as they formerly did after the old one of tracheal section.

Dr. O'Dwyer uses the following language in relation to this subject: "Although pneumonia is not an uncommon sequel of intubation of the larynx and of tracheotomy, I believe the principal factor in its causation after both operations is the impairment of the expulsive power of the cough from the inability to close the glottis, and the consequent retention of the irritating substances in the bronchi, and not the entrance of extraneous substances through the tube."[22] Others ascribe the frequency of these affections in thacheotomized patients to the fact, that the air enters the lungs directly, without having been warmed and moistened by passing through the normal channels.

I venture to express my doubts as to the soundness of either of the above opinions. So far as we know at present bronchial croup is just as frequent, and just as fatal in cases which have received no surgical treatment whatever, and in which the power to cough and expectorate has not been interfered with. The only difference to be noticed is, that the patients live longer in consequence of the operation, thus allowing the secondary affections to reach a greater degree of development. It is the natural tendency of the exudation process to extend in all directions downwards to the bronchi and smaller tubes, as well as upwards to the nares and so on, in spite of any and all methods of treatment. Speaking in general terms we can neither prevent it, nor cure it. Such being the facts as is conclusively shown by the experience of a multitude of observers, it is unnecessary to ascribe the causation of these secondary affections to any mode of treatment, until a reasonable array of facts can be brought forward to substantiate the assertion.

While it is always desirable on general principles to avoid a wound in the skin, yet that made in doing tracheotomy seldom gives much trouble, or does much harm. "Diphtheria of the wound was noted in only 6 of the 327 cases; 3 of these recovered."[23]

The septic material or poison does not enter the system in that way. It has gained admission, as a rule, long before there is any occasion to made a wound; and moreover, the septic cases pursue the same causes whether an incision has been made or not. It is rare for the tissues to slough or abscesses to form, or other untoward local event to occur in these cases. This objection to tracheotomy is more theoretical than practical.

[22] O'Dwyer, op. cit.
[23] Lovett and Munroe, op. cit.

The tracheotomy tube occasionally irritates the trachea, and produces exuberant granulations. So likewise does the laryngeal tube. Northrup found ulceration in five autopsies caused by the irritation of the lower end of the tube upon the anterior wall of the wind-pipe. These complications are not common, however, and they need not deter us from choosing either method in accordance with the other conditions present in the case.

A final word as to the after-effects of each operation upon the voice and general health. Drs. Lovett and Munroe,[24] personally investigated 56 cases of tracheotomy with these two objects in view. The operation in every case had been done at least a year previous to the examination. "Fifteen cases were seen from one to two years after operation; 16 cases in three years; 12 cases in four years; 2 cases in five years; 6 cases in six years; 4 cases in seven years; and 1 case in twenty-one years." There had been no deaths in this number of cases (56), and 53 were found to be in good general health. None of them had had a second attack severe enough to call for surgical interference, only 6 were liable to sore throats, a remarkably small proportion.

The voice was clear in all but 4 cases; and in these the impairment was not grave. One could not sing as high as she could before the operation, but laryngitis without operation produces the effect upon the voice at times, so that all the trouble cannot be fairly laid to the treatment.

The residences of seventeen children, who were intubed at the City Hospital, have been visited by Dr. C. M. Whitney, formerly house surgeon, at periods varying from two to fourteen months after the operation. One child had died a month after the onset of the disease from some cerebral affection, probably the result of sepsis. All the other children were well. Every one of them had been hoarse for a term ranging from two to twelve weeks. One had aphonia for two weeks. The voice in the fatal case mentioned above, never returned after the operation. So far as can be known at present, every one who survived eventually regained the voice in its natural degree. One had had a return of "croup" in eight months, but it was not membranous. All of these children swallowed without any difficulty. I have not been able to gather any evidence showing that the O'Dwyer tube produces permanent impairment of the voice, or of the power of deglutition.

I have thus in a very imperfect way, endeavored to show that, while intubation is a most valuable operation, it is not as free from objections and complications, and is not so far superior to the old and time-honored operation of tracheotomy as some of its advocates would lead us to suppose. The method has great advantages. In favorable cases it is easily and quickly performed; there is no cutting, and hence no hæmorrhage; no anæsthetic is required: as it is not looked upon by the laity in the same light as an ordinary surgical operation, consent for its performance is more readily granted; it can thus be done earlier in the disease; many practitioners will undertake the new method who would shrink from the old one; the tube takes care of itself; it is often coughed out when no longer required; it is especially adapted to young children.

But on the other hand, the operation may be diffi-

[24] Op. cit.

cult and even dangerous to perform; it may not relieve the dyspnœa; the tube may be repeatedly coughed out or it may be swallowed; it may "gum" thus requiring frequent removals; it may become suddenly occluded, and unless quickly ejected or removed, death will ensue; and there may be great difficulty in feeding the patient.

Both operations are often attended with difficulties, and occasionally with danger; both are liable to complications; the mortality attending each is about the same; the fatal results in a majority of instances are due to the extension of the disease to the lungs, and this occurs as frequently after one operation as after the other; in neither case is the treatment the cause of the complication, nor does it prevent, or cure it.

In conclusion, I would say, that in a majority of cases of membranous laryngitis intubation may be done with a fair prospect, that it will effectually relieve the dyspnœa for the time being.

That it is to be preferred in young children and in all cases living at a distance from skilled aid, where the tube must be allowed to take care of itself.

That it may be resorted to preliminary to tracheotomy.

That it may be done for euthanasia providing the operator is reasonably expert and can do it quickly without producing collapse.

Tracheotomy is indicated in those cases in which intubation cannot be done, or in which it fails to give relief to the dyspnœa.

In severe cases situated at such distances, or under circumstances in which only ordinary and not skilled assistance can be obtained in an emergency, tracheotomy is the safer method.

It is also to be preferred in those cases of intubation which cannot be fairly nourished either in the natural way or by enemata, etc.

It may be resorted to when the O'Dwyer tube is frequently ejected, or when it requires frequent removal to prevent obstruction.

I would repeat that as regards patients residing at a distance, if competent aid is to be at hand during the convalescence, intubation is advisable as it is if no care whatever is to be given to the tube. But if ordinary care and no other in case of accident can be commanded, and I mean by that, a fairly good nurse, or any clever person, then tracheotomy is the better procedure.

Each operation supplements, but neither supplants the other. The old one should ever be held ready to come to the aid of its young and vigorous rival. That Dr. O'Dwyer's method is a most valuable one, is amply shown by the fact, that it is surely growing in favor, and that new evidence in that direction is constantly being presented. As it has been before the profession but a few years, there is reason to hope that some means will be found to overcome its disadvantages, and thus make it a more complete substitute for the older, more serious, and more difficult operation. It marks a real advance in the art of surgery, and it is an honor alike to its ingenious inventor, and to American skill and perseverence.

— Professor Hofmeier, of Grissen, has been called to the chair of obstetrics in Würzburg, made vacant by the retirement of Professor Scanzoni. Professors Fritech and Kattenbach had previously declined the honor.

REPORT ON PROGRESS IN THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D., AND SAMUEL DELANO, M.D.

SULPHONAL.

This substance adds one more to our new stock of hypnotics, and at first sight the good of it might not appear, possessed, as one's mind naturally might be, by the thought that this is only one more to help in making a cumbrous list, from which it will soon be embarrassing to choose. We only need, though, to consider how complex a subject insomnia is, on how many varied causes dependent, in order to feel, as Rosenbach[1] emphasizes, the importance of increasing the number *still more*, in order that, having determined their exact physiological limits, we may select and adapt with increasing accuracy, and finally not prescribe simply an hypnotic, but a *certain* hypnotic for certain conditions.

In spite of a large number of hypnotics, a common objection to the older ones as Kast[2] points out, is that they act upon the central nervous system, including the vaso-motor, so intensely that a dangerous diminution of the blood pressure is possible. According to Schmiedeberg, no hypnotic should contain chlorine, and most of the newer hypnotics obey this law, as, for example, methylal, hypnone, urethan, paraldehyde and amyl-hydrate, several of which are prominent hypnotics at the present time.

The method of testing a new hypnotic is certainly of importance if we are looking for accuracy of results, and what Rosenbach[1] says *apropos* of sulphonal is well worth repeating. As every one knows, the mental condition has much influence upon the ability to sleep; therefore, in all tests we should first proceed *without the knowledge of the patient;* if the results appear good, let the patient know, and then substitute an indifferent agent, and with this alternate irregularly the hypnotic. Finally, administer it to patients, without their knowledge, who are not in bed, and at times when sleep is not customary.

Sulphonal was introduced by Kast and Hinsberg,[3] and of its rank Kast says it deserves a place not among those substances compelling sleep, but belongs to those that support the normal need for sleep, and, when this itself is dormant, arouse it. He points out that this is the most frequent condition to be met, and that it is precisely in these cases ("nervous insomnia") that the "drastic" hypnotics often work harm. It is a white powder with crystals of a large tablet shape, absolutely without taste or smell, soluble in eighteen to twenty parts of boiling water, and in one hundred parts at ordinary temperature. Experiments on animals first taught that for them it was a sure hypnotic. Given, then, to healthy men, it produced in general only a benumbing effect, a slight tired feeling, and a diminution of excitability, but only in the minority of cases procured sleep out of course. In patients, mostly cases of nervous insomnia, it almost invariably produced in from one-half to two hours a quiet and sound sleep, lasting five to eight hours. In only one case out of one hundred and twenty did it disappoint. Since then many observers have given the drug a thorough trial, and in all essential points substantiated Kast's account. Many of the series have dealt with mental cases, which naturally furnish good material, and to which sulphonal is especially suited on account

[1] Rosenbach. Berlin. Klin. Wchenschrift, 1888, No. 24.
[2] Kast. Ther. Mon. Hfte, July, 1888, p. 316.
[3] Kast and Hinsberg. Berl. Kl. Wchenschft., 1888, No. 16, p. 309.

of its lack of taste and smell. Rabbas [4] found the effect coming on in one-half an hour, more rarely in one to two hours; but Oestreicher [5] declares it slower in action — one to three hours. As to effects outside the hypnotic, or as to bad effects, they seem to be almost *nil*. Kast found in animals that some ataxia was produced before sleep set in, but did not observe this in man. Physiologically there is found to be no diminution of blood pressure, and in man no effects on the heart or circulation have been noted. No symptoms have been noted on the part of the digestive tract. In some cases the patients have been drowsy the next day, and Schwalbe [6] found slight after-effects in twelve per cent. of his cases, the most constant being slight vertigo and headache. In regard to the dose, the average has been thirty grains. Rosin,[7] making a clinical application of Rosenbach's cautions above mentioned, found that a dose of fifteen grains was not sure, though sometimes effective, (large enough for women, according to Kast) while thirty grains was a sure hypnotic, without unpleasant consequences, disappointing in but few cases, and equal to one-sixth to one-quarter grain of morphia. Forty-five grains produced no unpleasant effects, but one drachm, besides giving an intense sleep lasting eight to twelve hours, was followed by a staggering feeling, of which all the patients complained, and which lasted the whole of the next day. Cramer,[8] however, gave as much as one drachm in six days without ill consequences. Rabbas finds thirty to forty-five grains surer and better than amyl hydrate and paraldehyde, and its effect lasts longer than chloral, though it is not so prompt. Lovegrove [9] alone seems to have met with disappointment from the drug. He finds it very dear, and nothing asserted of it can he substantiate. It is *not* soluble in eighteen to twenty parts of hot water, nor in one hundred parts at the ordinary temperature. When given, he finds no effect for several hours, and then no good hypnotic action, but next day extreme drowsiness, with considerable cyanosis. Kast [2] explains that more exact observation has taught him that it is soluble in eighteen to twenty parts of boiling water, but recrystalizes on cooling. At the temperature of the body, though, *four hundred and fifty* parts of water are needed to dissolve one of sulphonal. Thus it is *relatively insoluble* in water, but the solubility is much increased by salts, hydrochloric acid, peptones, etc. Thus, for prompt action it should be given in a good quantity of warm water in the early evening hours, and best with the supper. In this way advantage is taken of the conditions favoring a rapid solution.

AMYL-HYDRATE.

So many trials have been given this hypnotic during the past year, and so successful have they been, that without doubt it may be accepted and added to the list of working hypnotics. With general unanimity it has been placed between chloral and paraldehyde, that is, in hypnotic effect, (Avellis,[10] Buschan,[11] Dietz,[12]) and the relative doses of chloral (German dose, fifteen grains) amyl-hydrate and paraldehyde are as one, two, three. Many assert its superiority to chloral in not having a depressing effect on the heart, but Dietz [12] has observed a pulse of thirty-six, and thinks the statement should not be modified. Buschan also, in his own case, observed that the pulse fell ten to thirty-five beats, and that the tension was much diminished. It has the advantage over paraldehyde that the disagreeable odor in the breath, which is annoying both to the patient and his friends is wanting. At the same time amyl-hydrate is itself a disagreeable drug on account of the taste. It mixes with water, but separates, and so should be given in a mixturd (vide case of poisoning infra). Gürtler [13] recommended syr. rubi as a corrigent, but Arellis [10] says it forms a precipitate with this. It would seem best to follow Dietz [12] and order but one dose, or if several, have them dispensed separately. In capsules it is a good but dear way. Gürtler [13] gave it to children in pills. It is a better substance to give by enema than chloral, because not so irritating — the effect is the same as *per os*. The average dose used has been forty-five minims, but Avellis [10] secured his success with thirty to thirty-six minims. It is certainly better to begin at this lower figure, because, although ninety to one hundred minims have been taken, Dietz [12] believes his cases of poisoning to have been from an amount not much over seventy-five minims.

As to its physiological action, its effects are hypnotic and sedative. Buschan,[11] experimenting on himself, took on five occasions from forty-five to one hundred minims, and observed the following effects: In two to three minutes the iris began to oscillate, and this went on to complete dilatation of pupil in from five to ten minutes; the pulse diminished ten to thirty-five beats, and the tension was so much diminished that there was almost dicrotism; the hypnotic effect began in ten minutes; reading, and especially the understanding of what was read, became difficult; in from ten to fifteen minutes he was forced to lie down, and then slept from eight to nine hours; there were no unpleasant after-effects.

Avellis [10] observed the hypnotic effect generally in from five to eight minutes. Patients under its influence are easy to awake, and are then clear-headed, but drop off to sleep again readily. The sleep is like natural sleep, and as refreshing. Some observers have not noticed any bad effects (Avellis, Buschan on himself) but others have noted a few. Gurtler [13] has noticed some excitement preceding the hypnotic effect, and the patient felt as if tipsy. In a few cases headache and vertigo followed. Buschan noticed nothing in men, but in a few women headache following, and sometimes a little mental confusion. Dietz,[12] though, has observed one serious accident. The drug had been used for some time in the form of a mixture *to be shaken*. This was once omitted and four patients got, it is not known how much, but from estimate not a great deal more than the average dose. On the night of taking and the next they all slept well, and nothing unusual was noticed, but on the morning of the second day they were all found in deep narcosis, from which it was impossible to arouse them, with relaxed limbs, sensibility and reflex irritability abolished, no corneal reflex, dilated pupils, slow irregular respiration, slow small pulse (fifty-six to sixty), and subnormal temperature. They were let alone without much treatment, and slept that day and the next night. If

[4] Rabbas. Berl. Kl. Wchenschft, 1888, No. 17, p. 330.
[5] Oestreicher. Berl. Kl. Wchenschft., 1888, June 18, p. 501.
[6] Schwalbe. Deut. Med. Wchenschft., 1888, June 21, p. 499.
[7] Rosin. Berl. Klin. Wchenschft., 1888, No. 25, p. 499.
[8] Cramer. Münch. Med. Wchenschft., 1888, June 12, p. 395.
[9] Lovegrove. Brit. Med. J., 1888, p. 1112.
[10] Avellis. Deut. Med. Woch., 1888, No. 1, p. 10, and Ther. Mouhfte, 1888, Feb., p. 53.
[11] Buschan. Berl. Kl. Wchenschft., 1888, No. 12, p. 238.
[12] Dietz. Deut. Med. Zeit., 1888, March 1st, p. 211.
[13] Gürtler, Berl. Kl. Wchenschft., 1888, No. 6, p. 99.

aroused, as they could be later, they appeared like drunken men. Dietz [12] compares the action of the drug in these cases to alcohol.

Clinically, the results have been almost an unbroken success. With the exception of the case above mentioned, Dietz [12] had good results in mental cases. Buschan [11] met with complete success in 91.6% of men, and, in women, success in 72.7, moderate in 15.5, and failure in 11.8. Avellis,[10] using it in forty patients with various diseases, and making in all three hundred trials, had but three failures. Mayer,[14] among several hundred observations on fifteen patients, does not speak of failure. Its general sedative effect Mayer has observed especially in chest affections with irritative cough; the irritability ceased quickly before sleep came on. Scharschmidt [15] gave it to eighty patients with various mental troubles and alcoholism. He ranks it next to chloral, and sometimes finds it more powerful. Avellis [10] also recommends it especially in icterus and icteric pruritus. Gürtler,[13] in out-patient practice, finds it satisfactory, except in a few instances.

METHYLAL.

Methylal is another hypnotic and sedative which has come into some prominence during the year, though not like sulphonal, a newly discovered substance, having been first made in 1839 by Malagnti, and as long ago as 1868 recommended by Dr. B. W. Richardson,[16] who classed it as an anodyne anti-spasmodic. Experimentally, Richardson found that it excited the action of the heart and diminished tension; that it caused deeper and slower respiration, and produced a desire to sleep; it was a sedative to pain, but not to a great degree. By long exposure to its vapor, an animal may be brought into a deep sleep; but, used subcutaneously, it has this effect much sooner. No vomiting follows narcosis produced by it. According to Richardson, it is tasteless if pure, though biting the tongue; has a low boiling point (107° F.), so that it evaporates quickly, possesses a fragrant odor, and is non-irritating to the respiratory passages.

Personali [17] conducted experiments on animals, which proved that, injected subcutaneously, it will cause immediately anæsthesia, suspension of the reflexes, and deep sleep, lasting six hours. If inhaled, the effects come on also very rapidly, but when given internally the absorption is very slow. It has, also, a toxic action when pushed, life ending by coma and paralysis. Lemoine [20] confirmed Richardson as to its effect on the circulation. Its elimination, Personali [17] found, takes place entirely and rapidly by the lungs. Like paraldehyde and most hypnotics, it is antagonistic to strychnia, controlling convulsions.

As to its clinical use, considerable evidence has accumulated in its favor as a hypnotic. Boubila and Hadjès [19] have found it efficacious in chronic mental cases, but not in fresh melancholia or mania. They have given it in doses of from forty-five minims to two drachms for long periods without ill effects; they note that the control of the drug is exhausted in from six to eight days, but three days' remission serves to restore it. Its solubility, pleasant taste, and innocuousness give it special advantages, and they find it "justly superior" to chloral, urethan, and opium — at least, in mental cases. Petrazzani (quoted by Krafft-Ebing [19]) met with favorable results in its use in insanity, two drachms usually producing in forty to sixty minutes a good sleep, lasting several hours. Krafft-Ebing's [19] trials of the drug differ from those of others in that he used *very small doses subcutaneously*. The very small dose he used on the suggestion of Merck, the more readily because of the dearness of the drug. This amount was one and two-thirds grains (gm. 0.1) in nine parts of water, making a subcutaneous syringeful ("Pravaz Spritze" = fifteen minims). He has used it in different cases, but now reports only of delirium tremens, having selected that as a disease where there is particularly obstinate sleeplessness. The number of cases embraced in the series was twenty-one, of which three-sixths he classes as light, two-sixths moderate, and one-sixth severe. He concludes that there was no doubt of its favorable effect in producing a "critical" sleep (of eight hours to twenty in duration). In six cases, only one dose was necessary; in ten, two to four; in three, five to eight; in two, ten to twenty. If necessary, it was repeated every two hours till sleep was procured. There were no cases of failure, though in some twenty-four hours was necessary; there were no fatalities in the series. During the convalescence, every evening, two injections were given to guard against a relapse. The quality of the sleep was natural, and no bad consequences were observed. The smallness of the dose is conspicuous, especially when it is contrasted with the internal dose, and this, with the tardiness of the effect (two to six hours), suggests to Krafft-Ebing that perhaps it is not a direct hypnotic, but acts by procuring conditions favorable to sleep. There is some burning at the point of injection, but he has seen no inflammation. His results have led him to consider it our *best quieting and sleep-producing agent in delirium tremens*, and in general he believes it to be excellent in all excited and sleepless conditions dependent on inanition and anæmia of the brain. In severe delirium of this nature and hallucinatory insanity, he has repeatedly seen it successful where other hypnotics have failed. It is of no value in hyperæmia, and so is not useful in toxic alcoholic delirium. It is not tonic for an exhausted brain, as opium, and this, perhaps, explains the persistence of tremor in the delirium tremens cases far into convalescence.

HYOSCINE.

So extensively has this substance been used the past year, that considerable additions have been made to our knowledge of its therapeutic application. Of the two derivatives from hyoscyamus, hyoscyamin has properties identical with those of atropia, and thus occupies no independent position. Of hyoscin, which differs considerably in many points from atropia, there are three salts in the market: the hydrochlorate, hydrobromate, and hydriodide. Of these, Kobert [21] recommends the hydrochloride of Merck. Erb,[22] however, could see but little choice, though he, too, has a leaning to the hydrochlorate. Thompson [23] prefers the hydrobromate in mental cases.

The most important difference between atropia and hyoscin attaches to their action on the brain. Atropia *increases*, but hyoscin, on the contrary, *diminishes* the

[14] Mayer. Ther. Mouhfte, July, 1888, p. 325.
[15] Scharschmidt. Ther. Mouhfte, 1887, No. 9.
[16] Richardson. Asclepiad, Vol. IV, 1887, p. 46.
[17] Personali. Progres. Med., July 2, 1887, No. 27.
[19] Boubila and Hadjès. L'Encéphale, 1888, No. 3, p. 281.
[19] Krafft-Ebing. Ther. Mouhfte, February, 1888, p. 55.
[20] Lemoine. Gaz. Med., July 14-21, 1888.
[21] Kobert. Ther. Mouhfte, July, 1887, p. 267.
[22] Erb. Ther. Mouhfte, 1887, p. 232.
[23] Thompson. Lancet, 1888, p. 218.

electrical excitability of the motor tract. This expresses itself in healthy men by a weak narcosis; but in conditions where the brain is irritated, as in mania and delirium, by a quieting effect, which makes it "without a rival."

Sohet,[20] in conjunction with Kobert,[21] used it in one hundred such cases, and found this action constant. As to the article by Haynes,[24] referred to in last year's *Review*, Kobert [21] finds in them an illustration of what will happen when it is used simply as a narcotic, with proper indications; it is not a substitute for morphia. Indeed, one cannot be too careful with the dose, because the susceptibility to its action is very variable. Erb [12] several times saw toxic action from gr. $\frac{1}{10}$, the patient appearing as if drunk. Most patients complained that it made them feel weak and sleepy for several hours, but Erb does not consider it an active *hypnotic*. Thompson [23] found that if the dose were not carefully regulated, it easily produced a marked sluggishness of all motor functions, with depression of reflex activity, dizziness, dimness of vision, an ataxic gait, and dryness of the mouth and fauces. Erb [22] also notes these symptoms, and, in addition, flushing of the face. In spite of the fact, then, that Kobert [21] does not find it a poison fatal to animals, and that Haynes (vide this JOURNAL, 1887, II, p. 357) used it in quantities as high as one-thirty-third of a grain at a dose, or one-tenth of a grain in twenty-four hours, one should proceed very carefully, as the symptoms from very small doses may be quite alarming (Erb). Because of the smallness of the dose and the necessity of controlling it, it is best to administer it hypodermically. One-three-hundredth of a grain is enough to commence with, gr. $\frac{1}{120}$ is, perhaps, an average, and no observer has given higher than one-fiftieth, and then only in obstinate cases (Fischer [25]).

The largest class of cases in which it has been used comprises excitement, restlessness (of melancholia), delirium, and mania in insane patients (Thompson,[23] Fischer,[25] Krauss). It has rarely failed in quieting the patient and usually producing sleep. Fischer [26] found it to succeed as a hypnotic (one-sixty-fifth of a grain) in obstinate cases, where morphia and chloral had failed. As long ago as 1883, Claussen recommended hyoscin in whooping cough, nervous palpitation, epilepsy, and *paralysis agitans*. During the last year, Professor Erb [22] has come forward with a very flattering notice of its success in this last disease. In its effect on the tremor it is a very important palliative, though it is not curative. Yet in several cases the tremor disappeared for half a day. The trial covered a dozen severe cases. In other spasmodic affections the results were not so uniformly favorable. Intermittent muscular spasm was controlled in a good many cases. In one case of severe torticollis and one of tetany the benefit was surprising. Buddee [27] confirms these statements of Erb, having found it of much value in controlling the involuntary movements of paralysis agitans, tremor senilis, and tremor alcoholicus.

ANTIPYRINE AND ANTIPYRETICS.

Very little has as yet been done to establish the *physiological* action of antipyrine, though the restriction to purely *clinical* and *empirical* study of the subject must tend to make much of our information untrustworthy. Robin [28] finds that it hinders tissue change and diminishes organic oxidation. To this property, no doubt, its quieting action on the nervous system is owing, because all depressants of nervous activity affect tissue change in this way. Robin calls attention to its antiseptic properties, which, he thinks, should be made more use of; at all events, they must, he believes, play a certain *rôle*. According to Caravias,[29] in five to ten per cent. solution it is a stronger antiseptic than sublimate (1–1000). The same writer attributes to it a special action on the spinal cord in therapeutic doses, diminishing its excito-motor activity. In larger, though not toxic doses, the strength of the systole diminishes and the peripheral vessels dilate. If this last is true of it, one finds it difficult to explain its direct hæmostatic action, as claimed by Hénoque.[30] (Hénoque believes that it contracts vessels and tissues.) Gerard [38] investigated its antifebrile action. If the heat centre in the tubercula quadrigemina is irritated, the increase of temperature is less and less permanent if antipyrine has been given. He considers inhibition of certain parts of the nervous centres as the essential factor in its antipyretic action, and the diminution of tissue change and lowering of temperature as results of the same. According to Elvey,[31] antipyrine suspends functional activity of the kidneys, and should be avoided in renal disease. Masella [32] finds that, when given by the rectum, it diminishes the temperature and is excreted by urine. Applied externally, there is no absorption; given subcutaneously, it appears very quickly in urine, and that it is not excreted into pathological fluids, nor by saliva, milk, or skim. Lepine and Porteret [33] have found that it increases the glycogen of liver, diminishing the formation of sugar. It also diminishes renal secretion.

Some of these items in its physiological action will explain certain of the accidents and unpleasant experiences which have followed its use, though these have been few, considering its very extended application, and, as a rule, have not been alarming. The most constant toxic phenomenon has been an eruption, quite diffuse, so that one observer has called it scarlatinal (Wilson [34] — two or three instances). To others it has seemed urticarious, while others have found it like measles, and difficult to distinguish from it (especially when antipyrine also causes coryza). Von Jaksch [35] is authority for the statement that other eruptions, as measles, easily assume a hæmorrhagic character under its administration. Germain-Sée [36] says the eruption occurs in one out of twelve to fifteen cases, but only when the administration is continued for ten to fifteen days in large doses. That this is not absolutely so is proved by Sturge's [37] case, in which four grains, given for migraine, caused in five minutes coryza, feeling of suffocation, cough, tinnitus, coppery taste in mouth, rapid pulse, profuse sweating, and an "urticarious eruption about thighs." Taylor [38] saw about same

[24] Haynes. Ther. Gaz., 1886, p. 594; Bost. Med. and Surg. Journal, 1887, p. 357.
[25] Fischer. Lancet, June 30, 1888, p. 1311.
[26] Sohet. Inaug. diss., Dorpat, 1886.
[27] Buddee. Deut. Med. Wchnschr., May 17, 1888, p. 407.
[28] Robin. Bull. Acad. d. Méd. d. Par., 1887, No. 49, p. 701.
[29] Caravias. Ctbl. f. kl. Med., January 28, 1888, p. 76.
[30] Hénoque. Gaz. hebd., January 13, 1888, p. 29.
[31] Elvey. Rev. de Clin. et d. Thér., March, 1888.
[32] Masella. Deut. Med. Ztg., March 26, 1888, p. 299.
[33] Lepine et Porteret. Comptes rend. Acad. d. Sc. Par., 1888, p. 1023.
[34] Wilson. Jour. Nerv. and Ment. Dis., 1888, p. 40, 43.
[35] Von Jaksch. Schmidt's J. B., 1888, II, p. 131; Wien. Méd. Presse, 1888, No. 6, p. 41.
[36] Germain Sée. Bull. Acad. d. Méd., September 6, 1887.
[37] Sturge. Brit. Med. Jour., 1888, p. 243.
[38] Taylor. Brit. Med. Jour., 1888, p. 695.
[38] Gerard Rev. méd. d. l. Suisse Rom., 1887, 11, p. 642.

set of symptoms from eight grains on two different occasions. There was intense coryza, great irritability of larynx, and cough, but no eruption. Sometimes the eruption has itched intolerably; at other times, not at all (Jennings). Almost all the cases have been women. According to Ollivier, most children tolerate it well, even a dose of forty-five grains to one drachm (daily?). Another fairly constant symptom in the intoxication cases has been *cyanosis*.

Wilson,[39] in quite a large series of cases, treated for relief of pain, had one case in a middle-aged woman, in whom it caused alarming syncope, with cyanosis. Brooks [39] collected twelve cases where there were some bad effects, which he believed to be owing to idiosyncrasy, inasmuch as the cases were usually associated with many others where no ill effects were observed. Neither was the dose to blame, as it was anywhere from four to fifteen grains. Others have observed great swelling of face and eyes, so that the features are obliterated. With the affection of the air-passages, there may be so much swelling that suffocation may threaten. Jennings [40] reports one of the most striking cases, which we will quote in more detail: A lady of sixty-seven, of gouty tendency, had been taking for eight days thirty-five grains of antipyrine for relief of rheumatic pains. In the beginning she got a general erythema, at first sight diffuse, but really made up of patches of the size of a three-penny piece, with a very slight interval. Then the face swelled, so that the eyes were almost closed. There was coryza and hoarseness. No suffering but an intense sensation of cold, "as if the body were filled with ice." Objectively, the feet and surface of body were very cold. The pulse was 76, which was twice the usual rate (idiosyncrasy!). No sensory disturbance, except a little tinnitus. The eruption and catarrhal condition gradually disappeared, leaving great prostration, while the sensation of cold lasted for a long while. Of two other cases by the same observer, in one seventy-five grains for two days caused loss of intelligence and severe gastro-enteritis, lasting for two days; in the other there was swelling of body and of the inside of the throat, so that suffocation was threatened. Jennings urges caution in the use of antipyrine, being certain that alarming symptoms follow in some cases the absorption of *small quantities*.

Beyond such cases as these in healthy subjects, and ending favorably in a short time, there have been a few cases of death attributed to antipyrine. Two such cases will be referred to in the typhoid series of Mollière.[41] In one, after fifteen days of antipyrine treatment, nose-bleed followed and death from "cachectic purpura without adynamia"; and Mollière says the antipyrine seems to have determined the hæmorrhagic phenomena. The second death, from eclampsia, where the autopsy showed an insignificant (!) amount of change in the kidneys, he attributes to the accumulation of antipyrine. These cases are, of course, extremely doubtful, and, as Raoult [42] says in reviewing them, the deaths are just as easily scored to the typhoid fever. A death is also reported from America. The patient was a child, for whom four grains was ordered twice a day, to be given morning and night. Instead, it was given by the father *every two hours*. Death took place under symptoms of cyanosis, collapse, and weak pulse. Doll [43] reports the case of a woman who took one ounce, in accordance with a newspaper advertisement. In three hours there was vomiting, and the patient sank into a deep swoon. The whole body was ice-cold and covered by cold perspiration. Pulse 120, respiration quickened. Mentally, the patient was in a condition resembling hypnotism, which lasted fourteen hours. During this time she appeared unconscious, but talked with the doctor, remembering nothing of it, however, afterward.

The proper treatment for cases of poisoning is said to be atropia and belladonna. It is possible that bad consequences have been owing to impurities, it being alleged that the manufacturers could not turn out a good article in quantities sufficient to meet the demand. Raoult [42] suggests that benzine is the deleterious ingredient; but Brooks, who has made much use of the drug, says that all his specimens have smelt of benzine. One French observer found that where one specimen was toxic, another, obtained from a different druggist, was well borne.

(To be continued.)

[39] Brooks. Brit. Med. Jour., 1888, p. 1052.
[40] Jennings. Lancet, 1888, I, p. 364.
[41] Mollière. Lyon Méd., 1888, p. 280.
[42] Rabuit. Le Prog. Méd., May 26, 1888, p. 412.
[43] Doll. Deut. Med. Wchnschft., February 23, 1888, p. 158.

Clinical Memoranda.

A CASE OF HYDATIDIFORM MOLE.[1]

BY GEORGE B. SHATTUCK, M.D.,
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S. C., aged thirty-seven years, single, domestic, born in Ireland, had been in this country five years, and had always lived in the same family. Entered the Boston City Hospital October 17, 1887. Had always been well until six or eight weeks previously. Habits good. The present illness began six weeks before entrance to hospital, with vomiting; this occurred six or eight times daily, and began usually about two hours after eating; there was distress in the region of the stomach, which was relieved by vomiting. The nausea and vomiting was not especially characteristic of the morning sickness of pregnancy. Bowels constipated, headache nearly all the time. Menstruated as usual for the last time about nine weeks before entrance.

Menstruation was due three weeks before date of admission. Flowed for one day only (usually unwell five days), then a few days later flowed a little more and stopped again; a week before admission began to lose blood again, and had been losing blood somewhat (more or less) off and on since — about two napkins daily — unaccompanied by pain.

Physical examination showed a distinct, movable, uniform swelling in abdomen, reaching from above pubes nearly to umbilicus (probably uterus), no movements, no bruit.

October 26th. Occasional nausea and slight flowing at times.

November 2d. Patient passed from Dr. J. H. Denny's service to mine. Abdominal tumor probably larger than at last record; nipples surrounded by dark areola, but breasts rather flaccid, like the breasts of a woman who had borne children. Patient denied earnestly and stoutly, as she had before, ever having

[1] Read, by invitation, before the Obstetrical Society of Boston, February 11, 1888.

had sexual intercourse with any one. No vomiting until to-day since the last record.

November 7th. Vaginal examination showed an elongated and somewhat congested cervix, and a muco-sanguinolent discharge from os, which was closed. The sound passed easily the normal distance, and then coming against some obstacle. Twenty minims of fluid extract of ergot three times daily was ordered.

November 8th. Patient continued to stoutly deny any possibility of conception.

November 9th. Very comfortable at the morning visit. She began to flow freely about 9 P. M., a little later a piece of hydatidiform mole was discharged, and subsequently other portions, with increasing hæmorrhage. I was summoned by the house officer about ten o'clock, but did not reach the hospital until midnight. I found the os sufficiently dilated to admit two fingers. The patient being etherized I passed in the hand and cleared out the uterine cavity of the remaining portions of mole and of blood-clots. There was probably enough in all to fill a third of a pail. An antiseptic intrauterine injection was given, the uterus contracted promptly and efficiently, the antiseptic pad was applied, and the patient made comfortable. Since then she has made a good recovery.

She continued to deny earnestly any occasion of conception. November 10th, however, after much friendly persuasion, she was able to recall that, about four months before, she took food at a restaurant with some friends, the ladies persuaded her to take something to drink, which she was not accustomed to do; the party went upstairs, and she was quite unconscious in regard to what might have happened, as the drink had confused her mind.

HALLUCINATIONS OF HEARING.

BY U. O. B. WINGATE, M.D., OF MILWAUKEE, WIS.

In the JOURNAL of August 2, 1888, there appears the report of a case of hallucinations of hearing by J. Alban Kite, M.D., of Nantucket, Mass.

Having had recently under observation a case which seems to serve so well as a companion case to his, I venture to report it.

Mrs. D., a widow lady of about seventy years of age, first came under my care on February 21, 1888. She had always enjoyed good health with the exceptions of some rheumatism which at times appeared in a subacute form, though not severe; and there was an indistinct history of some attack, which occurred years ago, resembling epilepsy, and thought by the patient to have been caused by a patent medicine taken at the time for rheumatism. There has been no illness for a long time prior to her present affliction. She has always been active in her habits of life. There is a slight impairment of hearing in both ears which has existed for several years. For several nights past she has been unable to sleep on account of voices which began talking as soon as she was comfortably in bed. At first when she arose they would stop. There were three voices most of the time which persisted in tormenting her with all kinds of talk, and much of their conversation was highly offensive to her sense of hearing in more ways than one; in fact they seemed to be "very evil spirits." For a time she kept the matter to herself, but growing worse she confided the trouble to a lady companion who tried to make her think it was of no consequence and would soon disappear. But her tormentors would not go away. They grew more and more persistent and began to follow her about the house during the day as well as in the night time. She would get up in the night and fly from one room to another to escape them, but they would soon find her out and begin again worse than ever. She soon became much worn out by them. They would sing, yell and quarrel among themselves, and at times command her to do things, and she was becoming afraid of them. Sleep was impossible day or night. I found the lady very nervous, with a quick pulse, coated tongue, restless, and anxious to be relieved of her symptoms, which, so far, she had considered as only a trick of her sense of hearing. In examining the case carefully I could find no physical trouble except marked constipation of long standing. Quite large doses of the bromides were administered with no results. The next day the bowels were very freely acted upon by an emulsion of ol. ricini, assisted by a copious enema. This was followed at night by thirty grains of chloral hydrate and forty grains of potassium bromide in two doses with an interval of half an hour. Several hours of sound sleep followed, the first for a week. The bowels were carefully regulated and kept so, and in a few nights natural sleep was obtained, the voices disappeared, and the asylum robbed of a patient. Five months have now elapsed, the patient is in her usual good state of health, and there has been no return of the hallucinations.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

ANNUAL Meeting at Washington, September 18–20.

FIRST DAY.

DR. W. H. DRAPER, of New York, delivered the President's Address,

UPON THE RELATIONS WHICH SCIENTIFIC AND PRACTICAL MEDICINE BEAR TO EACH OTHER.

We may differentiate the science from the art of medicine, but we cannot practically dissociate them. In their ideal union they are interwoven like warp and woof, built into each other like foundation and superstructure. Scientific medicine, to be sure, is not always practical, but it is ever striving to become so; and practical medicine, though not always in a strict sense scientific, is constantly tending to that end. In medicine, perhaps, less than in any other department of human activity has the distinction between the art and the science been sharply drawn. In spite of this close mutual relation, the worker in the science and the worker in the art occupy essentially distinct positions, and the aim and the methods peculiar to each must be constantly kept in view. The one is a naturalist, the other an artsman. The facts of science are of no more use as materials for practical work than the ultimate elements of our food would be for nutrition; they must first be transformed into new combinations, and then pass through a series of more or less complex changes before they can be made to yield up the force which makes them a power for good and useful achievements. It is well to remember that in

one sense practical is always in advance of scientific medicine, and that in another it is always in its train. It is always in advance because it is ever referring new problems to science to solve; it is in its train, because it has continually to test and digest the theorems which science suggests for their solution. There is no better illustration of this statement than that which is afforded by the history of parasitism, the latest and most portentous contribution which science has made to the theory and practice of the healing art. The germ-theory of disease may be said to have reformed surgery, but it is not safe to affirm that it may not be forging new errors in diagnosis and beguiling us into dangerous paths in therapeutics. We may well believe that we are on the eve of momentous changes in the healing art, resulting from discoveries in bacteriology, but these changes must come mainly from the independent and judicious application of these new ideas to the study and treatment of disease by the practical physician at the bedside. Already the relations of bacteria to the pathology and treatment of fever furnish an illustration of the way in which clinical observation enlarges and complicates the problem which the pathologist has to solve. Until we know how fever is produced, and whether it is a salutary or a dangerous process, to be antagonized or let alone, we are really in no better position to treat fever rationally, than we were before the etiological relation of bacteria to fever was suspected. The fault of medical practitioners in the country is the failure to indoctrinate the principles and demonstrate the practice of clinical medicine, along with the purely scientific knowledge.

We must preserve science so as not to imperil the progress of art, and we must cultivate art as if science were not so much its mistress as its handmaid. We may wisely recall and apply the answer which Iphicrates, the Athenian general, is said to have made when he was hard pressed by an orator before the people to say what he was, to be so proud: "Are you a soldier, a captain, an engineer, a spy, a pioneer, a sapper, or a miner?" "No," said Iphicrates, "I am none of these, but I command them all." So the practical physician may not be a very learned pathologist, an erudite physiologist, a skilful chemist, or an expert bacteriologist, but he must command them all, and it is he who must finally, through the co-operation of all the sciences which they represent, perfect the most beneficent of all the arts; it is he who, in his high position as the servant of humanity, must attain that wisdom which results from combining knowledge with the instinct and the skill for its useful application.

DR. W. W. JOHNSTON, of Washington, read a paper on the

GEOGRAPHICAL DISTRIBUTION OF TYPHOID FEVER IN THE UNITED STATES,

which was based largely upon the answers returned from three hundred and fifty physicians in various parts of the country, and colored maps showing the distribution of typhoid and of malarial fever were exhibited. His conclusions were: (1) That typhoid fever has a much wider distribution in this country than is accepted by the majority of medical men, and that its prevalence is very great in all the regions reviewed in the paper. (2) That the varieties and modifications of type are very numerous, covering a wide range, and simulating types of malarial disease. (3) That the prevailing type is without many, sometimes without any, of the more characteristic symptoms of the disease. (4) That the principal direction in which clinical study can be useful in the present state of our knowledge is in the collection of cases of undoubted typhoid fever; cases in which the diagnosis is made certain by characteristic symptoms, especially by post-mortem examination, in which there have been phenomena supposed to show malarial infection. (5) By the study of the localities of occurrence of such cases, by the finding of them, perhaps, in non-malarial regions, by the study of the blood and stool micro-organisms. (6) That no true progress can be made until the true value of the malaria-like symptoms is determined.

DR. STERNBERG urged the abandonment of the term "typho-malarial." In reviewing the army statistics he had noticed that "typho-malarial" fever had had a low mortality; he thought it difficult to understand how a complication could tend to diminish the severity of a disease.

DR. OSLER referred to the researches of Laveran, and their confirmation by various observers in different parts of the world, as proof that in the blood-changes we have the means of differentiating between a fever of a malarial and one of a typhoid origin.

DR. JAMES H. HUTCHINSON, of Philadelphia, read a paper on

THE MANAGEMENT OF THE STAGE OF CONVALESCENCE IN TYPHOID FEVER.

With return of the normal temperature, the physician is prone to everlook the danger. The authorities differ greatly as to the rules laid down for the management of this stage, some advising the administration of solid food. He favored the continued use of the milk diet with a little milk toast in convalescence, and at the end of two weeks butcher's meat. The only objections to be urged against the milk diet are the wishes of the patient and the tendency it occasionally has to produce constipation. Alcohol may be withheld in many instances; but, on the other hand, it may for the first time become necessary, and no doubt convalescence is often very much hastened by its use. Huxham's tincture he has found useful at this time, together with iron, and pepsin and muriatic acid. Severe cases should remain in a recumbent position for a week after the beginning of convalescence. At first the patient may sit up for a half-hour, the time to be gradually increased. Convalescent typhoid patients are more emotional than in health, and severe relapses may occur from mental excitement. It has been noticed at the Pennsylvania Hospital that after visiting days there is more or recrudescence of fever.

DR. PEABODY, of New York, did not believe that errors in diet were so frequently the cause of recrudescence as was formerly supposed. He was of the opinion that the ulcers had nothing whatever to do with the production of diarrhœa, a conclusion derived from the frequent study of cases at the autopsy-table.

DR. ORD, of London, referred to a hospital case which ran the usual course up to a certain period in the convalescence, when an extraordinary range of temperature appeared for several days, with delirium and an abiding desire for food. The patient had been allowed milk and beef-tea, and for ten days two eggs daily. She was given boiled sole, and within twenty-four hours her temperature was normal, and conva-

lescence was thereafter uninterrupted. We should study the individual as well as the fever.

Dr. Kinnicutt, of New York, remarked that he considered relapse to be very often the result of indiscretion in diet, and that therefore the old way of adhering strictly to a liquid diet was the best.

Dr. George Ross, of Montreal, read a paper entitled

SOME FORMS OF PARALYSIS AFTER TYPHOID FEVER.

It is not to be wondered at that the nervous system suffers after typhoid. The signs of exhaustion of the nervous system are constant, and generally in proportion to the severity of the fever. The nervous disturbance may be general, or some part of the spinal cord or some one or more of the spinal nerves exhibit altered functions. The nervous phenomena almost invariably are both motor and sensory; always in the case of spinal nerves, never in any of mixed. According to Nothnagel, the order of frequency of these affections is as follows: 1. Parts of one nerve, as the ulnar or peroneal. 2. Paraplegia, preferably of the lower extremities. 3. Less frequently, one extremity, either upper or lower, or two extremities in crossed order. 4. Simple alteration of sensibility. The history of a case of paraplegia resulting directly from typhoid fever and ending in recovery was given in detail, and also the history of a remarkable case which presented paralysis involving all the limbs, and, in addition, the muscles of the palate.

Dr. Ord stated that he had seen many cases of peripheral neuritis, and also of paraplegia and protracted cases of difficult articulation. In one case there was not only the loss of speech, but also a loss of the power of remembering words.

Dr. Starr thought it a legitimate question whether the neuritis may not be due to alcohol taken either during the course of the disease or previously. Again, cases of peripheral neuritis of one or two nerves may be due to pressure in consequence of position assumed.

Dr. Delafield remarked that we have the experience that the poison of infectious diseases produce, as do toxic minerals, acute degenerative processes. There is a variation as to which particular part of the body is affected.

Dr. James C. Wilson, of Philadelphia, presented a communication entitled

CASUAL THERAPEUTICS IN INFECTIOUS DISEASES.

The paper was based upon an experimental study of the effect of hypodermic injections of calomel in the treatment of five cases of typhoid fever, all severe, and three of pulmonary tuberculosis. In all there was a distinct amelioration of symptoms and a modification of the temperatures. The drug was given at intervals of four or five days.

Dr. Sternberg gave the results of a treatment of yellow fever that he had ventured to suggest while in Havana recently. The acidity of the contents of the stomach in this disease had led him to prescribe an alkali—bicarbonate of soda. He had received reports of thirteen cases treated by this method in Havana, and all had recovered. In regard to the constipation and the attendant rise in temperature in Dr. Wilson's case of typhoid, he stated that a species of bacillus present in the human intestine produces a fever-causing ptomaine. A rise in temperature may quite as often be produced by them as by the specific germ.

Dr. Peabody had unsuccessfully used naphthaline during the last year in the treatment of typhoid.

Dr. Jacobi extolled the bichloride treatment of diphtheria, and stated that he believes in no other way can the disease be so successfully handled.

SECOND DAY.—WEDNESDAY, SEPTEMBER 19.

Dr. Robert T. Edes, of Washington, read a paper on

THE ABSOLUTE AND RELATIVE VALUE OF ALBUMEN AND CASTS, AND OF RENAL INADEQUACY, IN THE DIAGNOSIS AND PROGNOSIS OF DISEASES OF THE KIDNEY.

The term albuminuria has held a place in medical nomenclature, until comparatively recently, synonymous with Bright's disease. Dr. Munn's observations were cited to show that many cases of intermittent albuminuria, when followed out carefully, are found to have developed Bright's disease. Four of Dr. Munn's sixty-nine cases died within three years. Many such are met with in business men of middle-life, and of overweight. The great diagnostic significance of casts and their variety, was next touched upon. A question of the greatest interest is, whether we can detect a pathological condition of the kidney in the diminution of any of the constituents of the urine. Long after the presence of kidney disease is established, the daily quantity of urea excreted may be far above the physiological limit. A very badly damaged kidney may, in fact, get rid of a large quantity of urea. In conclusion, numerous tables of statistics, bearing upon the question of albuminuria and the secretion of urea, were presented.

Dr. Janeway followed with a paper on the same subject. If we consider first the diagnostic importance of albumen, we are forced to state that, from various circumstances, it is apt to be overrated, and, taken by itself, to be by its presence, or its absence, extremely misleading. Particularly is this true of examinations of single samples of urine, or even of one, or of several days' urine, provided such days are not close together, or, on the other hand, sufficiently separate. Cyclical, or intermittent, or functional albuminuria is the most interesting of the possibilities. In these cases, the albumen being generally present in the daytime and absent at night, is apt to be overlooked by those who examine only the night and morning urine, and detected by those who examine urine passed in their presence, as at the time of an office visit, or in examination for life insurance, or by those making a study of the urine of a large number of individuals. Mistakes are especially liable to occur between this form and those cases of chronic diffuse nephritis which are attended by the intermittent appearance of albumen. An occasional occurrence of a hyaline cast cannot be considered as proof of chronic renal disease, as against cyclic albuminuria. Such casts the writer has seen occur in two cases at considerable intervals, the urine not having shown them at a number of previous nor subsequent examinations. So, too, while ordinarily the percentage of albumen is small, yet in some instances it is large, in one case under the writer's observation reaching twenty-five per cent. by bulk, moist. Neither does the age limits usually set always hold. In one instance functional albuminuria was observed in a child of five years.

Dr. James Tyson, of Philadelphia, presented a communication entitled,

THE RELATION OF ALBUMINURIA TO LIFE INSURANCE.

No system of life insurance is perfect which does not include those who are apparently healthy and those who are not. Certain applicants presenting themselves for examination for life insurance are wrongfully rejected, because of the presence of albumen in the urine. The reader mentioned the following conditions which if observed by competent and well-trained observers, if it were always possible to get such, would enable the companies to save these risks. These are: (1) The applicant must in all other respects present the signs of good health. (2) The albuminuria must be unaccompanied by tube-cast, however perfect may be the health in other respects; albumen and tube-casts conjoined always meaning structural changes. (3) The specific gravity of the urine, that is, the "real" specific gravity (that of the quantity for twenty-four hours), should not be lower than 1.015–1.025. Great care must be taken to secure the "real" specific gravity, as it would be unfair, to reject the candidate on account of the specific gravity of a single specimen. (4) The signs of hypertrophy of the left ventricle, and the existence of high vascular tension associated with albumen, would exclude the candidate. (5) The age of the applicant is a highly important consideration. It is doubtful whether any person forty years of age with functional albuminuria should be accepted, unless at least he has been long under the observation of a competent and conscientious examiner. (6) The presence of true gout in any case should decide against the person, because gout is always, sooner or later, followed by interstitial nephritis. Finally, retinal changes such as are associated with nephritis, should exclude the applicant. The absence of the albumen from the urine passed on rising in the morning is an important aid in the diagnosis of functional albuminuria, but not an essential one.

DR. JACOBI reminded the members of the Association of an anatomical fact, which is an explanation of the presence of albumen in the urine of children. There is, at the very beginning of their existence, a discrepancy between the growth of the renal arteries and the growth of the tissue of the kidney. Besides, the capillaries of the kidneys do not permit of the passage of the same quantity of water through them as in adults. Thus there is disproportion.

DR. PYE SMITH, of London, preferred the term "functional" to any of the other names given to this condition. At the present day there is no physiological ground for believing that the healthy kidney secretes albumen at all. With respect to the tests for albumen, he stated that he had come back to the old test of heat and nitric acid, in suitable proportions.

DR. A. L. LOOMIS, of New York, read a paper on

THE CARDIAC CHANGES IN CHRONIC BRIGHT'S DISEASE.

He considers that it is a failing and a hypertrophied heart which is to be found in Bright's disease, as in other diseases. Authorities discuss a hypertrophied heart as though of the utmost importance, and make little or no reference to cardiac degeneration in its relation to the cardio-vascular changes in chronic Bright's disease. He then briefly stated Cohnheim's theory, namely, that the circulation in the kidney, as in all other glands, varies with the demand upon their functional activity, Circulation through the kidney varies directly with the proportion of the parenchymatous elements of the kidney and the excrementitious elements in the blood. Any diminution in the glandular tissue of the kidney at once raises the ratio between the excrementitious materials and the functional powers of the kidney. As a result, when the renal functioning power is lessened in connection with retention of excrementitious materials, the systemic forces generally are projected upon the kidney, in order that the total elimination may remain undiminished.

We thus have two widely different conditions tending to produce arterial tension — conditions which may act singly or conjointly, and affording a rational explanation of the varying amount of cardiac hypertrophy found in apparently similar renal conditions: *First*, a general and primary arterial sclerosis, to which both the cardiac and renal changes are secondary; and, *second*, arterial, as well as cardiac hypertrophy, which are compensatory and conservative, as is cardiac hypertrophy in aortic lesions.

In summing up authorities, while most of the theories, as well as clinical evidence, thus adduced seem to be directed to establishing a cause for the arterial change and increased tension, it was claimed that many of the facts presented support this proposition; that degeneration of the heart-walls, with dilatation of the heart-cavities, are the most frequent and, perhaps, the characteristic cardiac changes in chronic Bright's disease. He then presented observations made in a series of cases, and reached the following conclusions: As a rule, the more extensive the obliterating changes in the renal arterioles, the greater the degree of cardiac hypertrophy. In two cases where the cardiac hypertrophy was greatest, the only change found in the kidneys was obliterating arteritis in the arterioles. In other varieties of Bright's disease the heart changes seem to be directly dependent upon the renal disease, or rather, upon the toxæmia and faulty nutrition which result from them. In all cases of chronic Bright's disease, increased arterial tension and compensatory hypertrophy are present some time during their course; but when the time is reached at which the renal symptoms clearly establish an interference with the function of the kidney, a feeble heart-action and diminished arterial tension will indicate degenerative cardiac changes. The cases gave no evidence of acute endocarditis secondary to renal disease, but chronic endocarditis was present in seven cases. Where a systolic murmur was heard during life, accompanying a sudden cardiac dilatation, the autopsy gave no evidence of mitral disease; that rheumatic valvular disease may remain latent for many years, but when Bright's disease is developed in such cases heart insufficiency is immediately developed. His cases gave no evidence that valvular lesions occurred secondary to kidney disease. He presented the statistics of Bellevue and Roosevelt Hospitals, showing that in a total of 164 cases, 43 were complicated by Bright's disease secondary to the valvular disease. The result of the studies seems to indicate that the cardiac changes in chronic Bright's disease have a wide range of variation, and that we cannot predict with certainty the exact nature of the changes which may be present in any given case, except that possibly they are degenerative, and that sooner or later a condition of heart-failure will be reached which may fairly be designated as a Bright's heart. The more marked these are in any case, the more unfavorable the prognosis. We must regard

Bright's disease as a constitutional disease, in which the repair and waste in all the tissues of the body are imperfectly carried on, and in one way or another the kidney changes are expressive of other visceral and arterial changes, which, combined with the kidney lesion, make up the clinical and pathological history of the disease.

Dr. Delafield objected to two of the propositions advanced by Dr. Loomis as counter to his experience: first, the proposition that cardiac hypertrophy is often developed without any change in the kidney, except in its arterioles; second, that the morbid changes in the glandular structure of the kidney are usually associated with changes in the cardiac walls.

Dr. Peabody spoke of the frequency with which the heart is not hypertrophied in well-marked cases of chronic diffuse nephritis. His remarks were based upon a study of two thousand consecutive autopsies performed in the New York Hospital. Perhaps in thirty per cent. of the cases no atrophy of the heart had been noticed.

Dr. Samuel C. Chew, of Baltimore, Md., followed with a paper on

THE RELATION BETWEEN CHRONIC INTERSTITIAL NEPHRITIS AND ANGINA PECTORIS.

Dr. Da Costa, of Philadelphia, Pa., presented a paper on

THE TREATMENT OF VALVULAR AFFECTIONS OF THE HEART.

He began with a reference to the prevailing ideas on the treatment of these affections. The presence of a valvular affection is not the key-note to be taken. The indications on which the true treatment should be based are: 1, the state of the heart-muscle and heart-cavities; 2, the rhythm of the heart; 3, the condition of the arteries and veins of the body; 4, probable length of disease; 5, the general health of the patient; 6, the secondary results of cardiac affection.

Dr. G. Baumgarten, of St. Louis, Mo., read a paper on the

DISTURBANCES OF THE HEART–RHYTHM, WITH REFERENCE TO THEIR CAUSATION AND THEIR VALUE IN DIAGNOSIS.

By itself, the condition of irregularity of the heart-rhythm may be considered to be of no great significance, but it is far otherwise when taken in connection with other things. It is desirable to group cases according to the forms of irregularity. These are, 1, mere fluctuation variations; 2, variations in frequency, as well as in amplitude; 3, comprises all cases of intermittent, deficient, alternating, and bigeminous rhythm. The conditions producing arythmia of the heart are: 1, affection of cardiac centres in the medulla; 2, reflex influences; 3, the action of drugs on the nervous apparatus of the heart; 4, changes in the heart itself (this class constitutes the majority of the cases); 5, deficient blood-supply; 6, dilatation from heart strain. The condition is more likely to arise in insufficiency than in stenosis of the valve. In sclerosis of the coronary arteries we also have a condition producing arythmia.

THURSDAY, SEPTEMBER 20TH.—THIRD DAY.

Dr. Edward C. Seguin, of New York, read a paper on

THE RELATION BETWEEN TROPHIC LESIONS AND DISEASES OF THE NERVOUS SYSTEM.

He divided the so-called "trophic lesions" into two great classes. In one the lesions are probably mostly due to the action of extraneous causes, and are preventable. The second class embraces lesions which seem to be directly due to the nervous disease, and which are its necessary and unpreventable results.

He endeavored to show that lesions of the second class, which alone merit the name of *trophic lesions*, occur in organs and tissues which are anatomically continuous, and whose life (or preservation of structure and function) is associated or interdependent.

He concludes that disease of the nervous system produces true trophic lesions when it interferes with the associated or interdependent life of continuous tissues. This proposition he offered only as a partial and preliminary answer to the question under discussion.

Dr. Horatio C. Wood, of Philadelphia, followed with a paper on the same subject. His propositions and conclusions were as follows: (1) It is physiologically proven that the nervous system directly affects general nutrition; (2) various lesions are the immediate result of previous nerve disease; (3) in various cases the lesions are not preceded by circulatory disturbance; (4) no known vaso-motor condition is capable of causing many of these lesions; (5) therefore it is absurd to attribute changes to preceding vaso-motor changes.

Dr. Ord, of London, stated that these so called trophic disturbances might be produced in three ways: (1) through disease of the spinal cord; (2) through disease of nerves; (3) in a reflex way. In illustration he mentioned a case of chronic hypertrophic cervical pachymeningitis in which there was a wasting of the tissue in the digits of the affected arm, and osteo-arthritis; also the case of a man who, through violent exercise, had lost power in his arms, and whose muscles underwent extreme wasting. There was also wasting of the skin. In conclusion, Dr. Ord spoke of the swelling of the joints of women approaching the climacteric. Various other reflex disturbances were referred to.

Dr. Henry P. Bowditch, of Boston, considered that much might be gained by studying the subject on simpler lines; that, therefore, it would be well to limit the question to a consideration of its relation to muscles, for in muscles we have not two sets of nerves anatomically distinct, at least such are not demonstrable; we have not the "anabolic" and "katabolic," or "metabolic" nerves. It would be better to confine the term "trophic" to nitrogenous metabolism of muscle.

Dr. Ferrier, of London, said that the nervous system has a direct influence on the nutrition of tissue, altogether apart from vaso-motor influence. The influence of nerves is amply demonstrated in the case of muscles; whether it be in the case of the skin is not so certain. Possibly there are centres which preside over nutrition. It is an interesting question whether there are "trophic" nerves apart from motor and sensory.

Mr. Victor Horsley, of London, called the attention of his hearers to the recent and interesting investigations of Dr. Frederick Mott, to whom belongs the credit of being the first to show that atrophy is a

true active dystrophy and not a mere passive change. By cutting of the cauda equina he demonstrated an atrophy of the femur. The whole of its inner surface was lined with osteoclasts.

Dr. W. H. Welch reported the results of experiments relating to the

THYROID GLAND OF THE DOG,

performed by Dr. W. S. Halsted in the Pathological Laboratory of the Johns Hopkins University. Extirpation of both lobes of the gland of the dog was found to be uniformly fatal in from two days to three weeks, with symptoms similar to those noted by previous experimenters. A large number of experiments were performed to test the remarkable statement of Munk that these symptoms and the fatal result are not due to the loss of the thyroid gland, but are referable to some undefined injuries attending the operation of removal. Munk found that eight dogs survived the isolation of the gland by ligation of all the arteries and nerves entering it, provided the wound healed by first intention. In the experiments reported by Dr. Welch, with strict antiseptic precautions, the two lobes of the gland were isolated, and all their vascular and nervous connections ligated. Under these circumstances the gland underwent coagulation-necrosis, and although in eight cases primary union of the wound was obtained, the animals died with the usual symptoms of extirpation of the entire gland. These results, therefore, are directly opposed to those reported by Munk.

In order to determine whether, after complete separation of the gland from all of its vascular and nervous connections, the gland could by any possibility escape death, a single lobe was isolated in a large number of cases in the manner described. In all instances, however, necrosis of the gland ensued, and at the most a few follicles in the periphery of the gland escaped destruction.

Extirpation or isolation of one lobe of the thyroid gland, in the majority of cases, is followed by the full recovery of the animal without any of the symptoms peculiar to complete extirpation. In these cases of partial extirpation very interesting and peculiar changes appear in the remaining lobe. These changes, which have been in part mentioned by Mr. Victor Horsley, but not described in detail, were exhibited in a series of microscopical specimens.

Dr. Welch believed that while these changes were probably to be interpreted as functionally of the nature of a compensatory hypertrophy, the term hypertrophy did not fully characterize the anatomical condition. These changes, resulting in a transformation of the normal structure of the adult gland, may perhaps be best interpreted as a return to the embryonic state of the gland.

In seven or eight cases out of fifty unilateral extirpations death occurred within a month, without any complications to explain this issue, and with primary union of the wound. The animals became weak and cachectic, had often ulcerations of the gums, and in two cases convulsions. In these fatal cases the follicles of the remaining lobe were found nearly or quite devoid of colloid material, and filled with small oval or polyhedral epithelial cells, without regular arrangements, and without new formation of capillaries. Small-celled infiltration of the interstitial tissue was absent.

In two cases, after ligation of everything entering two lobes of the gland, except the main artery and vein, changes were found similar to the hypertrophic ones already described. Both cases developed symptoms like those of total extirpation. One terminated fatally in two months, the other recovered. These cases suggested the possible dependence of the anatomical alterations upon changes in the nerves supplying the glands.

Dr. Jacobi, of New York, read a paper on

THE PATHOLOGY OF THE THYMUS GLAND.

Because of the great length of the paper only a few extracts were given. The literature of the thymus for the last ten or twenty years treats more of its histology and embryology than of its pathology. The author referred to the fact that there is no certain size of the thymus; that indeed a great many different sizes and weights have been taken to be normal by different writers. Dr. Jacobi referred to the very doubtful connection between an alleged hypertrophy of the thymus and a so-called laryngismus stridulus. Still he admitted there are a few cases in which the sudden death of infants could not be explained any better than by the hypertrophy of the gland. Briefly he alluded to inflammations and suppurations of the gland, and to the occurrence of punctated or larger hæmorrhage into the tissue, and to the occurrence of malignant growths in the organ. Among them he mentioned endothelioma, lymphoma, fibroma, sarcoma, carcinoma, and myxoma, which have been described; the majority of them, however, are decidedly doubtful, particularly because it can be proven that a number of these pseudo-plasms did not originate in the thymus, but in the thyroid gland, or in a neighboring lymphatic gland. For the last eight months he had given his particular attention to the study of the thymus, with regard to tuberculosis, syphilis and diphtheria.

In cases of tuberculosis of the thymus presented, tubercle tissue appeared in the following forms:

(1) As miliary tubercles, composed entirely of small, round, or polygonal cells, with a reticulum basement substance in the recent state. In the later stages these miliary tubercles or granula may, at their centres undergo cheesy metamorphosis (coagulation necrosis).

(2) Miliary granula are also found which show, in their centres, the presence of giant cells.

(3) Large, cheesy areas, in the periphery of which we still find miliary tubercles, or granula, composed of giant cells, around which are arranged spheroidal or polygonal cells in a fine reticulated basement substance.

(4) In all cases the arteries of the adjacent areas of the thymus tissue were the seat of a typical endarteriitis (in some cases obliterating) of a tubercular character.

(5) A very careful and painstaking examination of the above forms showed tuberculosis present in all cases. In most of the above forms we had also the presence of the bacillus in the walls of the arteries and arterioles undergoing tubercular changes, and the lumen of the vessels was the seat of obliterating changes.

(6) In the thymus, tuberculosis may appear simply as so-called tubercle tissue, an infiltration of the tissue of the gland or organ with spheroidal or polygonal cells, held together by a delicate basement sub-

stance; this tissue has no characteristic arrangement; the arteries in such areas may be the seat of obliterating processes. In all of the cases examined by us there were present the characteristic bacillus tuberculosis.

Syphilis results in the thymus in two changes, both in the accumulation of hyperplastic connective tissue, and, as in one case, in the formation of a gumma. Diphtheria results in general parenchymatous degeneration.

The time allotted to the paper was mostly taken up by the demonstration of frozen sections illustrating the normal topography of the thymus; also of photographs of the same, and of microscopical drawings of the pathological changes.

Dr. George M. Sternberg, U. S. A., did not read his paper on

RECENT RESEARCHES RELATING TO THE ETIOLOGY OF YELLOW FEVER,

but described the method followed in these researches, which were carried on at Havana, and stated that he had not arrived at any definite result as to the specific etiological element of yellow fever. He had made many cultures from the blood of persons just dead of this disease, as well as from the liver, kidneys and urine. The results were negative as regards those made from the blood and urine. From the kidneys and liver numerous organisms were obtained, but in no instance did he obtain the micrococcus of Freire. Various tube-cultures were shown.

The Society then adjourned.

AMERICAN NEUROLOGICAL ASSOCIATION.[1]

Fourteenth Annual Meeting.

SECOND DAY. — AFTERNOON SESSION.

Dr. J. H. Lloyd, of Philadelphia, read a paper on

A CASE OF FOCAL EPILEPSY SUCCESSFULLY TREATED BY TREPHINING AND INCISION OF THE MOTOR CENTRE.

The centre for movements of the arm, in which the spasm began was uncovered, the exact centre found by faradism, and then excised. Three months later there had been no return of the attacks.

Dr. John B. Deaver, of Philadelphia, who was present by invitation, gave an account of the methods of performing the operation.

Prof. David Ferrier, of London, said that it was too early to say that the patient was cured. He had been rather disappointed in his own results in cases of true focal Jacksonian epilepsy, where, after excision the attacks had been much the same. He mentioned a case of focal epilepsy with a history of trauma where trephining had been performed without advantage. Later, Horsley had trephined again and excised a portion of the cortex, but the fits persisted. This showed the great risk of setting up a convulsive habit, and was an argument in favor of early operations. He asked if the paresis continued between the attacks. On receiving an affirmative answer he said that that was indicative of an organic lesion rather than of a post-epileptic hemiplegia. Cases with organic lesion did better. He spoke of a patient who had three thousand fits in fourteen days. Horsley removed a cicatrix and there had been no return of the fits for three years. He doubted the value of excision where there was no organic lesion. It was of interest to note in Dr. Lloyd's case that sensibility was not impaired except for the perception of form and movement, which showed a loss of muscular sense, but not of tactile sense.

Mr. Victor Horsley, of London, said that in one case, after operating, the patient recovered his mental health which had been much impaired, and went for three weeks at a time without a fit, which was a distinct gain. Another patient went without a fit for two years, then, three months ago, he had two, and had had none since. He did not want to give a positive opinion in regard to the recurrence until after five years. Freedom from epilepsy for one or two years had restored mental power and the ability to make a livelihood. There was no danger from faradic stimulation of the brain. The muscular sense is equivalent to the sense of moving and having moved. We may lose the memory of having moved, but the appreciation of the condition of moving exists. In testing this we should always seize the segment on the sides, not on the front and back. He cut his flaps now with the convexity upwards and backwards. In cutting with the convexity downwards the epidermis came away. Intermittent irrigation had been proven to be useless.

Dr. W. W. Keen, of Philadelphia, said that he had used the spray once but not since, and that he had not regretted giving it up.

Dr. L. C. Gray, of New York, said that in idiopathic epilepsy the interval between the fits differed enormously; in one case the interval had lasted ten years. Reflex epilepsy may recover quickly when the cause is removed, or may persist. He trephined a patient once, without excision, and obtained a respite for four months, when the fits returned worse than ever. He once operated without antiseptic precautions, acute encephalitis followed, and the brain was found honeycombed with pus.

Dr. C. L. Dana, of New York, asked if there were not some sensory disturbances in Dr. Lloyd's case. There had been nothing like an aura since. To produce sensory disturbances we must destroy a large area, and the parts excised were neither large nor deep.

Dr. C. K. Mills, of Philadelphia, said that true tactile sensibility was unimpaired. The differentiation of two points was very uncertain for fine work, depending so much on the personal equation. Dr. Lloyd's patient recognized the slightest touch or breath, but objects of different shape were not recognized, owing to the impairment of the muscular sense.

Mr. Horsley, said that it was well to have the patient indicate with his other hand the point touched. There was often confusion because anæsthesia occurred in Charcot's segments, and it disappeared by segments downwards. One patient, while recovering, located a touch on the phalanx above.

Dr. E. C. Seguin, of New York, spoke of the case recently reported by Dr. Weir and himself. The tumor measured twenty mm. in diameter, and a portion of cortex an inch in diameter and involving the subjacent white matter was removed. The tumor was in the end of the left second frontal and in the precentral gyrus. The patient has had con-

[1] Concluded from page 330.

vulsive seizures since, beginning in the right arm and cheek. There was now rather more paresis. There was distinct tactile anæsthesia in the hand, forearm and cheek, but other forms of sensibility seemed unaffected. There was also loss of taste on the right side of the tongue. In answer to Professor Ferrier he said that the sensibility of the leg was normal.

Dr. Lloyd said that there was some degeneration of the cells in the part excised. In testing the sense of locality the patient mistook the fingers touched. Why is there a pronounced sensory aura in lesion of the motar centres? This looks as if there might be sensory areas in the motor cortex.

Dr. James J. Putnam, of Boston, read a paper on

INFECTIOUS NEURITIS.

The patient was a man of twenty-eight, with a good previous history except that he had a nervous temperament. After exposure he was taken with pains in the back and limbs, and loss of power. There was great tenderness over the nerves but no special impairment of sensation. There was no high temperature. At the autopsy the spleen was found much enlarged, and nodular hæmorrhages were found in the lungs. In the nerves, of which specimens were shown, the myeline was changed and swollen, the axis cylinders were in part normal and in part destroyed. There was an infiltration of cells about the nerves, with granular masses and spindle-cells; there were only one or two Mastzellen. In other nerves the axis cylinders were enlarged, atrophied, or even wanting. Swelling was common about the fibre, generally about Ranvier's nodes. In the cord the nerve roots were infiltrated. In the medulla there were slight capillary hæmorrhages and congestion in the neighborhood of the vagus nucleus. It is possible that later on a poliomyelitis may have developed. The nature of the process was acute. Neuritis was of toxic origin, from the bacteria of constitutional disease, metals, or other poisons. An infectious origin was possible as there was no history of tubercle.

Dr. S. G. Webber, of Boston, said that in a paper read before the Association four years ago he reported the autopsies on two cases that had died at the Boston City Hospital from failure of respiration, one of them having inhalation pneumonia. At that time he undertook various experiments to excite neuritis artificially in animals. In these experiments the changes were most marked in the early stages at the constriction of Ranvier, and in one of the autopsies, where almost all the nerves were examined, the changes in the nerves only slightly affected were seen at the same place. At that time, the question of traction in the removal of nerves had not been considered. In almost all the nerves a few of the finer fibres remained intact. At the same time that neuritis was so common in Boston there was an epidemic among horses characterized by similar symptoms.

Dr. Pye Smith, of London, said that most cases did well, and hence autopsies were rare. He asked if here, where gout is rare, was gout, without alcoholism, a cause of multiple neuritis. What was Landry's paralysis? Verified cases were hard to find.

Dr. J. Van Bibber, of Baltimore, mentioned a case of multiple neuritis with difficult breathing from implication of the facial nerve.

Dr. Dana said that while local neuritis from gout was common, multiple neuritis from gout was unknown. Neuritis from rheumatism was not very uncommon.

Dr. Putnam agreed with Dr. Dana about gout as a cause of neuritis, and asked an explanation of the pulmonary hæmorrhages.

Dr. Webber said that they had not occurred in his cases, perhaps because the vagus was not involved.

Dr. Seguin showed specimens of nerves from a case of tabes dorsalis reported by Dr. Shaw last June.

A paper by Dr. Burt G. Wilder, of Ithaca, on

THE RELATION OF THE THALAMUS TO THE PARACOELE (LATERAL VENTRICLE), WITH COMMENTS ON OTHER MATTERS SOMETIMES MISUNDERSTOOD,

was read by title.

The following officers were elected: *President*, Dr. E. C. Seguin, of New York; *Vice-Presidents*, Dr. Philip Zenner, of Cincinnati, Dr. C. L. Dana, of New York; *Secretary and Treasurer*, Dr. Graeme M. Hammond, of New York; *Council*, Dr. James Hendrie Lloyd, of Philadelphia; Dr. M. Allen Starr, of New York.

THIRD DAY. — THURSDAY, SEPTEMBER 20TH.
MORNING SESSION.

Dr. G. L. Walton, of Boston, read a paper on

DISLOCATION OF THE CERVICAL VERTEBRÆ; FIVE CASES; SPONTANEOUS RECOVERY.[2]

Dr. Webber mentioned a case of probable dislocation where a man struck his shoulder, which was followed by partial paralysis of the legs, and later, of the arms, with pain in the arms. Later on he could move his legs, but the arms remained partly paralyzed for some time. It was thought that the nerve-roots were affected, rather than the cord.

Dr. Gray spoke of a case of dislocation with displacement into the pharynx, where there was paresis of the legs and impairment of deglutition. It was reduced without any snap, but the patient went out of the hospital and fell and redislocated it. This time the vertebra went back with a snap, and there was no subsequent trouble.

Dr. Putnam asked if, in the last case reported, there was a hæmorrhage into the nuclei of the hypoglossal and glosso-pharyngeal, or injury to the nerves.

Dr. Walton believed that the hæmorrhage was more probable, as it was hard to imagine pressure on those nerves without pressure elsewhere.

Dr. H. M. Bannister, of Kankakee, spoke of a case of probable pachymeningitis where there was complete atrophy of one-half of the tongue.

Dr. Landon Carter Gray, of New York, read a paper on

A TYPICAL CASE OF DISSEMINATED SCLEROSIS, WITH A POST-MORTEM SHOWING ONLY LEPTO-MENINGITIS CEREBRI.

The patient was a man of thirty-five, who presented all the symptoms of typical disseminated sclerosis. Drs. Sachs and Starr coincided in the diagnosis, and the man had been shown to various classes as a typical case. There was intention tremor, jerky movements, nystagmus, scanning speech, apoplectiform attacks, and gradual dementia. There were no patches of sclerosis, but there was lepto-meningitis. There were slight changes in the nerve-fibres in the subjacent

[2] To appear in this Journal.

white substance. Koenig had reported a similar case. In disseminated sclerosis, the tremor was thought to be due to lesions of the cortex or of the conducting fibres below.

Dr. Webber thought that in typical disseminated sclerosis convulsions were rare. He mentioned a case which seemed in some respects like tabes dorsalis. Various delicate movements were performed without tremor. The autopsy showed patches of sclerosis in the cerebrum, pons, and cord.

Dr. Bannister thought tremor was due to trouble of conduction, rather than of origin of movement in the cortex. Why might not this case be regarded as an anomalous form of general paralysis.

Dr. E. D. Fisher, of New York, said that disseminated sclerosis began earlier than general paralysis. He spoke of a case of general paralysis of nine years' duration, where there was marked tremor constantly, which was increased on intended movements. There were ataxia, exaggerated knee-jerks, and epileptiform seizures or maniacal attacks, followed by paresis. Both disseminated sclerosis and general paresis were attended with convulsions. In the former there was no tremor, except on intended movements. The peculiar facial expression and the scanning speech were important in diagnosis.

Dr. Mills said that an analysis of symptoms was necessary. Voluntary motion is steady because there is no impairment of conduction. When the disseminated sclerosis is in the sensory tracts there is no tremor; when it is in the motor tracts conduction is impaired. In meningitis, we get tremor by interference with the initiation of cortical motor impulses.

Dr. Putnam asked if the varicosity of fibres in the brain found in Dr. Gray's case had any relation to the symptoms, or if it was an artificial product.

Dr. Gray said that this varicosity had not been found in the normal brain, in tabes dorsalis, or in cerebral syphilis.

Dr. Putnam had seen a form of intention tremor in cerebro-spinal meningitis.

Dr. Gray said that the differential diagnosis was very difficult. In general paralysis leptomeningitis was a slight factor, and there were even cases where the pia mater was unaffected. It was an interstitial encephalitis, and not a meningo-encephalitis. We cannot point out the symptoms of lepto-meningitis as yet. Apoplectic attacks are common in disseminated sclerosis.

Dr. Blackburn, of Washington, exhibited by invitation some preparations of the brain. The brain was hardened in the usual way in Müller's fluid and alcohol, and then soaked in a solution of Japan wax, which is a concrete oil, and chloroform. It was then put into melted wax, and, when cooled, it made a firm, hard body, which was of great value in demonstrating the gross anatomy of the brain, the convolutions, etc.

Dr. F. X. Dercum, of Philadelphia, then read a paper by Dr. S. Weir Mitchell, of Philadelphia, on

Aneurism of an Anomalous Artery, causing Antero-posterior Division of the Optic Chiasm and Bi-temporal Hemianopsia.

The patient's illness began with weakness of the right leg, diminution of the field of vision toward the left in the left eye, and later toward the right in the right eye. Later on, the left papilla began to atrophy. There was a little headache, running rapidly into coma and death. The autopsy showed an aneurism an inch in diameter, completely dividing the optic chiasm. Outside of this tumor ran soft, shreddy portions of the optic nerves. The anterior communicating artery of the circle of Willis was absent, and the two carotids ran into the aneurism. The aneurism and the arteries of the circle of Willis were shown.

Dr. Frederick Peterson, of New York, read a paper,

A Contribution to the Study of Muscular Tremor.

Some fifty tracings of various tremors made by Edwards's sphygmograph were exhibited. The tracings were made from patients with various diseases. The rate of oscillation was found to be from 3.7 to 5.8 per second in paralysis agitans; 4.6 to 6.3 in disseminated sclerosis; 8.7 to 12 in exophthalmic goitre; 7.6 to 7.8 in hysterical tremor; 8.5 to 11.2 in alcoholism; 7.4 in neurasthenia; 5.6 to 6.8 in delirium tremens. Tracings of ankle clonus were also shown. He could not yet state the value of this method for diagnosis. Tremor was thought to be of cortical origin.

Dr. Wharton Sinkler, of Philadelphia, asked if the writer had taken simultaneous tracings of ankle and patellar clonus.

Dr. Peterson said that he had not, and then explained the methods employed.

Dr. Hare, of Philadelphia, explained an apparatus that he had used with Dr. Weir Mitchell, and said that it was extremely difficult to get accurate tracings of tremors.

Third Day. — Afternoon Session.

Dr. Philip Coombs Knapp, of Boston, read a paper on

Some Post-hemiplegic Disturbances of Motion in Children.[a]

Dr. J. H. Lloyd read a paper on

The Report of a Case of Tumor of the Cervical Spine.

Dr. John B. Deaver read a supplementary paper on

The Surgical Report of the Operation.

Dr. E. O. Shakespeare, of Philadelphia, gave an account of the pathological changes found in the case.

Dr. Mills said that it was difficult to make a focal diagnosis in this case. There was paralysis without trophic changes or reaction of degeneration. Pain was hardly a focal symptom. So complete a paralysis of the arm and leg with no facial paralysis might point to the cord. The case was of physiological interest as showing a lesion of the anterior cornu. The questions that arise in such cases were, Should we operate? and could we get at the lesion?

Dr. Dercum asked the relation of the changes to the symptoms, a point which he thought was left unexplained.

Dr. Lloyd said that the case looked at first like an ordinary hemiplegia, but the history showed the difference. The cerebro-spinal axis was normal except at this point, and here there was osteitis, pachymeningitis and hæmorrhage or hæmorrhagic myelitis in the anterior cornu.

[a] To appear in this Journal.

DR. WHARTON SINKLER, of Philadelphia, read a paper on

HEREDITARY CHOREA.

The writer gave an elaborate account of the history of the disease, showing that Dunglison, in 1844 (instead of Huntington, from whom the disease gets its name), was the first to describe cases in Long Island, where it was called megrims. In 1863, Lyon also described cases, nine years before Huntington's paper appeared. An exhaustive review of other reported cases was given. Two cases were reported, one in a family where it could be traced back three generations, appearing generally at the age of thirty-five, and the other in Pennsylvania in a family where hereditary chorea had been known for years. It was regarded as a distinct affection and its main distinguishing features were heredity, an onset between thirty-five and forty, and the fact that it was incurable and often attended with mental symptoms. If it skips a generation, it may reappear and it may begin before thirty-five.

DR. KNAPP spoke of a case of chorea in a woman which resembled hereditary chorea in some respects. She came to him for some other trouble, but she had had violent choreic movements for about twenty-five years, coming on about the age of twenty. She was married, had a family, and had worked hard all her life. There was no heredity or mental impairment. Physical examination revealed nothing important. Her children did not have either this form or Sydenham's chorea. Treatment was unavailing.

DR. MILLS spoke of a case of chorea in a woman forty-one, which began in the hand and tongue and spread to other parts. Her father had a similar trouble, and her child, two years old, had peculiar choreic movements.

DR. GAY, of London, said that there was a disease in horses where the horse rotates and falls, which is called "megrims."

DR. E. N. BRUSH, of Philadelphia, said that in Long Island, where this affection seems to be common, they say when a man is angry he has the "megrims."

DR. PITMAN said that the affection in horses was known here as blind staggers. Megrim is a common name for various disorders.

The names of Prof. David Ferrier and Mr. Victor Horsley were proposed for honorary membership, after which the meeting adjourned.

THE ABSINTHE FIEND. — The celebrated absinthe factory of Pernod was recently sold to a M. Picard for 5,500,000 francs (about $1,045,000) cash. This factory turns out daily 1,000 cases, of one dozen quart-bottles each, of absinthe. The greater part of this is consumed in Paris and the larger cities of France, the army officers being the greatest users of the poisonous compound.

— "What kind of moral discipline is to be expected from a mother who, time after time, angrily shakes her infant because it will not suckle her, which we once saw a mother do?" Thus asks Herbert Spencer. The mother's course seems to have been quite unjustifiable, especially if, as we have always supposed, it is the duty of the mother to suckle the child, and not of the child to suckle the mother.

THE BOSTON

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THE INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, NUMBER IX.

ANOTHER volume of that wonderful Index has just been issued, making the ninth, and including words from Medicine (popular) to Nywelt. The whole number of author titles has reached 100,130. Of the subject titles, the book titles have reached 93,154, and the titles of journal articles have reached 307,351. A second addition is made to the abbreviations of titles of medical periodicals employed in the catalogue, which covers a dozen pages. These titles are not all of new publications, though a very large proportion of the twelve pages represent new journals.

It is almost inevitable that one should run across the title *museum* in turning the pages of this new volume, and, with the remembrance of the address of the President of the late Medical Congress in his mind, should pause to see what sort of material the library presents on that subject. Some five and a half pages are covered by the list of catalogues alone of anatomical and pathological museums, while nearly a page is covered by the index to periodical articles on the museums themselves. These latter articles are mostly descriptions by visitors, lectures on the preparations, or descriptions and acknowledgments by curators of additions to the cabinets under their charge during some specified time.

There are eleven pages filled with titles and references to Double Monsters.

One can hardly fail to feel more respect for his nose when he finds it filling thirty-one pages of this Index.

We have devoted no little space to each volume of the catalogue as it appeared, because its successive volumes must be regarded as additions to our literature in that they make medical libraries valuable by making their contents accessible. They appeal to the imagination as no other catalogue does, in the buried clinical records they make available. But the labor expended upon the catalogue must be watched in Washington to be appreciated. The thought necessary even

to arrange the classification and headings of subjects is infinitely greater than one could imagine who has never been brought face to face with similar work. Such classification cannot be thought out beforehand. The most elaborate system of classification carefully worked out would fail when brought into direct use, for the articles were not made to be catalogued, and conform to no system of nosology. The catalogue aims to bring out even the facts contained in the body of articles but not given in their titles, so that the most modest writer may feel sure that his article will be carefully considered by one reader, at least. There is also one pleasing thought which may comfort some individual whose careful account of a case is not given that prominence it deserves in the medical journal: that is, that the record of an individual fact is of more consequence in the eyes of the cataloguer than the most painstaking and pretentious article on the present state of medical science.

THE TREATMENT OF DIPHTHERIA.

In the last number of the *Bulletin General de Thérapeutique*, Dr. G. Guelpa, of Paris, insists on the value of irrigations of perchloride-of-iron solutions in diphtheria, and states the following propositions:

(1) Every case of diphtheritic angina not complicated with any other infectious affection is followed, almost without exception, by recovery in the space of a week, if it be combated within the first twenty-four hours of its existence by irrigations in the throat and nares of a one per cent. aqueous solution of perchloride of iron, and if these irrigations are practised *at least twice or three times every hour during both day and night.*

(2) In general, these irrigations in the throat prevent the extension of the diphtheria to the larynx and trachea.

(3) In cases of croup, especially if tracheotomy be early performed, pulverizations of the perchloride solution through the canula afford a good means of combating the disease, and increase greatly the chances of success.

Guelpa claims extraordinary results from this treatment, which, he says, must be carried out pitilessly in a disease so fraught with mortality. He dwells on the importance of the solution of ferric perchloride being weak, not concentrated. A solution of one per cent. can do no harm if swallowed, or if it penetrate the larynx. Indeed, the latter contingency, according to this authority, is one rather to be sought for than avoided. There certainly, he says, is no danger that the ferric solution shall penetrate the air-passages below the larynx. The lavage of the larynx by the solution is one of the favorable conditions of the treatment; it is the only means of accomplishing the antisepsis of this organ, and it is the true preventive treatment of croup.

As for the means of making these irrigations, a common rubber ball injector with suitable nasal or mouth-piece is used. The child (in case the patient be a child) must be held firmly, the head being pressed between the left elbow and chest of the operator, the left hand of the latter being applied to the child's forehead, while, with the right, the canula of the irrigator is slipped into the mouth of the little patient. Advantage can sometimes be taken of the absence of a tooth for effecting this object. With the penetration of the canula, an effort of vomiting is generally excited. Then the operator presses upon the rubber ball, and the whole region of the fauces and pharynx is thoroughly and rapidly irrigated. The operation is done in a very few seconds, and without inflicting any suffering on the patient. But little of the injected liquid is swallowed, as the pharyngeal contraction which is excited expels most of it by the mouth. The nasal injections are less easily made than the buccal, but they are often indispensable, especially where there is a tendency on the part of the diphtheritic membrane to gain the nasal cavities. To prevent this untoward result, they may be given occasionally — every two or three hours.

Guelpa claims that his method is much easier of application than the swabbings or paintings of the throat so frequently practised in diphtheria, or even than the administration of perchloride of iron mixtures by mouth at relatively short intervals.

It is needless to say that new modes of treatment of diphtheria have been the order of the day for the past forty years; but the method of Guelpa (who, by the way, is no mean authority on the subject) seems to have some measure of rationality in its favor, but the forcing a child to submit to such a process at such short intervals, will be an insuperable objection.

MEDICAL NOTES.

— In his eulogy on Dr. Agnew, Dr. Thomas, after speaking of his constant generosity to the poor and to all kinds of charitable enterprises, adds: "After thirty years of brilliant professional success, of uninterrupted health, of industry, of frugality, beyond making simple provision for the needs of those immediately dependent upon his labors, he died comparatively poor in this world's goods. Is the reason far to seek? In revealing this I violate no confidence, for this is the climax of his fame, the cap-sheaf of his career, the crowning glory of his life, to which his children point with pride! Had it been otherwise, a want of symmetry would have disturbed the perfect rotundity of his career. As it is, the fair proportions of a beautiful record are left free from blemish and without spot. His income was immense, and he steadily invested it; some will say wisely, for he put it out of reach of moth, of rust, and of thieves."

— In Holland a commission has been appointed for the study and the suppression of Beri-beri. Its President is MacGilavry, Professor of Anatomy and Hygiene, in Leyden.

— A correspondent of the *American Lancet*, writing of the Washington Medical Congress, says: "While it has been a pleasure to hear our trans-Atlantic brethren, one is forcibly reminded in listening to their frequent audible and unconscious vocal expirations which create innumerable divorces between all the parts of speech of the reply—er—which—er—a—er—gentleman is—er—said to—er—have made when somebody—er—called his attention to the habit, he said: 'To "er" is human, to forgive, divine.'"

BOSTON.

— The Guild of St. Barnabas for Nurses opened its new home for nurses at No. 96 West Newton Street, Saturday evening, September 30th. Addresses were made by Rev. Dr. Phillips Brooks, Rev. F. Osborne, and Dr. Edward Cowles. The house is designed for a resting-place for trained nurses in the intervals of their professional engagements.

NEW YORK.

— The different medical schools opened their winter sessions during the past week with large classes. At the university the introductory lecture was delivered on Tuesday evening, October 2d, in the new Loomis Laboratory, by Professor Wm. G. Thomson, who took for his subject "The Laboratory as a factor in Medical Education."

— Dr. Early W. Walton, house surgeon at the Manhattan Eye and Ear Hospital, died of peritonitis September 29th, at the age of thirty two. He was the son of Major M. W. Walton, a noted criminal lawyer of Austin, Texas, and was educated at the University of Virginia. He was afterwards graduated in medicine at Bellevue Hospital Medical College, and practiced in the South for five years. He then determined to become a specialist in ophthalmology and etiology, and eighteen months ago returned to New York for the purpose of studying these branches. He had held the position of house surgeon at the Manhattan Hospital but two months at the time of his death.

— Dr. Wm. M. Thallon, a distinguished young physician of Brooklyn, whose name was especially identified with the electrical treatment of uterine fibroids, died October 1st, in the 30th year of his age.

Miscellany.

BOSTON DISPENSARY.

THE statistics of this institution for the year ending September 30, 1888, are as follows:

The number of new patients treated at the central office is 21,505, classified as follows:

Medical Department.—Men, 2,937; women, 4,721; children, 2,508; total, 10,166.

Surgical Department.—Men, 1805; women, 822; children, 570; total, 3,197.

Skin Department.—Men, 489; women, 401; children, 220; total, 1,110.

Department for Diseases of the Nervous System.—Men, 581; women, 381; children, 61; total, 1,023.

Department for Diseases of the Throat and Nose.—Men, 676; women, 642; children, 487; total, 1,805.

Department for Diseases of Women.—Women, 562; total, 562.

Department for Diseases of the Eye.—Men, 262; women, 278; children, 293; total, 833.

Department for Diseases of the Ear.—Men, 155; women, 202; children, 220; total, 577.

Department for Diseases of the Genito-Urinary System.—Men, 834; women, 2; children, 4; total, 840.

Department for Diseases of the Rectum.—Men, 78; women, 18; children, 5; total 101.

Orthopedic Department.—Men, 63; women, 46; children, 68; total, 177.

Dental Department.—Men, 240; women, 401; children, 473; total, 1,114.

The number of visits made by patients, old and new, at the central office is 48,154, classified as follows: Medical, 18,389; surgical, 29,765; total, 48,154. The number of patients treated in the Districts is 12,467, including 304 cases of midwifery, classified as follows: Men, 2,210; women, 4,578; children, 5,679; total, 12,467. The results of treatment in the Districts are as follows:

Discharged, cured or relieved	11,315
Removed to Hospitals	879
Died	299
Remaining under treatment	40
	12,523
Under treatment at last annual report	66
	12,467
The number of patients treated at the Central Office and in the Districts is	33,972
The number of cases of midwifery attended during the year	304
The number of cases of midwifery attended since July, 1856	5,343
Whole number of patients since October, 1796	997,527
Whole number of patients since July, 1856	878,724
Average daily attendance at Central Office during the year.	159
Largest number present any one day, August 15	265
Smallest number present any one day, September 26	31
Number of recipes put up during the year	51,664
Number of house recipes	41,131
Number of district recipes	10,533
Largest number of recipes put up in one day, May 21	328
Smallest number of recipes put up in one day, September 26	41
Number of paid recipes	47,235
Number of free recipes	4,429
Number of paid dental patients	1,038
Number of free dental patients	76

The list of medical officers for the ensuing year is as follows:

Surgeons: Drs. J. Foster Bush, George H. Monks, Edward O. Otis, William M. Conant. Physicians: Drs. Robert Disbrow, John Dixwell, Thomas M. Rotch, Claudius M. Jones, Harold Williams, James J.

Minot, George M. Garland, Edward M. Buckingham, Vincent Y. Bowditch, William C. Emerson, Robert B. Dixon, Russell Sturgis, Thomas F. Sherman, James S. Howe, Frederic M. Briggs, Winfield B. Bancroft, William F. Temple, George E. Richards.

Department for Diseases of the Skin. — Physicians: Drs. Francis B. Greenough, Abner Post. Department for Diseases of the Nervous System. — Physicians: Drs. William N. Bullard, John A. Jeffries, Elliott G. Brackett. Department for Diseases of the Throat and Nose. — Physicians: Drs. Thomas A. DeBlois, John W. Farlow, Edward W. Warren. Department for Diseases of Women. — Physicians: Drs. Francis H. Davenport, John W. Elliot, John B. Swift, Rufus A. Kingman. Department for Diseases of the Eye. — Physician: Dr. William D. Hall. Department for Diseases of the Ear. — Physicians. Drs. George A. Leland, Henry L. Morse, William S. Bryant. Department for Diseases of the Genito-Urinary System. — Physicians: Drs. George H. Tilden, Francis S. Watson, Hayward W. Cushing, Gardner W. Allen. Department for Diseases of the Rectum. — Physicians: Drs. Walter J. Otis, William D. Hodges.

Obstetric Department. — Physician: Dr. Charles M. Green.

Orthopedic Department. — Physician: Dr. Royal Whitman.

Dental Department. — Dentist: Joseph E. Wait, D.M.D.

District Physicians. — Drs. Willis B. McMichael, Henry Jackson, Henry C. Baldwin, George G. Sears, Silas H. Ayer, George Haven, Robert W. Greenleaf, George E. Thompson, Frederick W. Stuart.

Apothecary: Frederick H. Dudley. Assistant Apothecary, Joseph S. Lang.

William H. H. Hastings, *Supt.*

Correspondence.

ANTIPYRINE IN SEASICKNESS.

Boston, October 4, 1888.

Mr. Editor, — I beg leave to offer the following, summarized from the *Journal de Médecine et de Chirurgie*, of recent issue:

It having been reported by O. Bonnet that antipyrine in a dose of thirty grains a day sufficed, nearly always, to prevent seasickness, E. Rollet made numerous observations, *in re*, during a voyage from Marseilles to Oran. There was about three hundred passengers on board the vessel. When the ship began to pitch, and the first symptoms of "*nausea*" were perceived, sixty persons at least took from fifteen to forty-five grains of antipyrine. Of the whole number, four only were enough free from *mal de mer* to sit through dinner. On the return trip the result was essentially the same. It is affirmed that the drug was taken according to the directions given by O. Bonnet.

This experiment shows how difficult is the exact *seeing* of things which at first appear very simple.

Very respectfully,

F. B. Stephenson.

REPORTED MORTALITY FOR THE WEEK ENDING SEPTEMBER 20, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	680	298	23.10	13.05	11.11	3.45	3.00
Philadelphia	1,016,758	329	114	13.50	12.00	2.70	6.30	2.40
Brooklyn	751,432	—	—	—	—	—	—	—
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	179	70	24 08	6.72	5.04	2.80	10.08
Baltimore	437,155	157	66	14.72	21.76	3.84	5.76	1.92
Boston	407,024	187	80	21.73	11.46	12.72	3 18	5.83
Cincinnati	325,000	113	—	15.13	15.35	2.67	4.45	7.12
New Orleans	246,000	108	34	29.44	11.96	5.52	—	16.56
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	92	42	32.70	11.99	9.81	7.63	3.27
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	19	2	42.08	5.26	21.04	15.78	—
Charleston	60,145	37	13	16.20	13.50	8.10	2.70	2.70
Portland	40,000	9	2	11.11	11.11	11.11	—	—
Worcester	76,328	22	18	18.16	9.08	18.16	—	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	30	15	23.33	—	19.99	3.33	—
Fall River	61,203	29	20	37.95	6.90	17.25	10.35	—
Lynn	51,467	18	—	5.55	—	5.55	—	—
Lawrence	40,175	31	17	22.61	16.15	22.61	—	—
Springfield	39,952	8	5	37.50	12.50	37.50	—	—
New Bedford	36,298	15	10	39.99	—	33.33	—	6.66
Somerville	33,307	14	8	57.12	14.28	21 42	14.28	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	9	4	11.11	—	11.11	—	—
Chelsea	27,552	9	2	—	22.22	—	—	—
Haverhill	24,979	9	4	22.22	22.22	—	11.11	—
Taunton	24,716	9	6	22.22	—	22.22	—	—
Brockton	24,784	9	1	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	4	2	—	—	—	—	—
Malden	18,982	8	4	37.50	—	12.50	—	—
Fitchburg	17,534	7	5	42.84	28.56	28.56	—	—
Waltham	16,651	1	0	—	—	—	—	—
Newburyport	13,839	5	1	20.00	20.00	20.00	—	—
Quincy	13,336	—	—	—	—	—	—	—

Deaths reported 2,047: under five years of age 842; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 464, consumption 210, acute lung diseases 185, diarrhœal diseases 189, diphtheria and croup 93, typhoid fever 89, whooping-cough 36, malarial fever 28, scarlet fever 15, measles 8, cerebro-spinal meningitis 4, erysipelas two. From whooping-cough, New York 21, Washington four, Philadelphia five, St. Louis two, Baltimore, Nashville, Somerville, and Fitchburg one each. From malarial fever, St. Louis nine, New Orleans eight, Washington five, Philadelphia and Baltimore two each, Cincinnati and Charleston one each. From scarlet fever, New York 10, Fall River three, Philadelphia and Baltimore one each. From measles, New York seven, Baltimore one. From cerebro-spinal meningitis, Washington and Somerville two each. From erysipelas, New York and Haverhill one each.

In the 28 greater towns of England and Wales with an estimated population of 9,598,273 for the week ending September 15th, the death-rate was 17.7. Deaths reported 3,187: infants under one year of age, 1,087; whooping-cough 67, scarlet fever 57, measles 39, fever 32, diphtheria 35, small-pox (Preston) one.

The death-rates ranged from 13.2 in Oldham to 26.2 in Norwich; Birmingham 17.0; Bradford 14.5; Hull 14.2; Leeds 22.1; Leicester 13.9; Liverpool 19.9; London 16.3; Manchester 25.7; Nottingham 15.6; Sheffield 21.4; Sunderland 14.2.

In Edinburgh 13.9; Glasgow 16.8; Dublin 19.4.

The meteorological record for the week ending September 29, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Sept. 29, 1888.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday,...23	30 17	56.0	57.0	52.0	82.0	88.0	85.0	N.		N.E.	14		10	O.		O.	1	.01
Monday,..24	30 23	52.0	56.0	50.0	75.0	81.0	78.0	N.		E.	10		2	F.		C.	2	.01
Tuesday,..25	30.03	50.0	55.0	39.0	81.0	82.0	82.0	S.		E.	3		12	C.		O.		
Wednes,..26	29.52	52.0	58.0	45.0	100.0	77.0	88.0	N.		W.	34		14	R.		C.	11	2.08
Thursday,.27	29 80	62.0	74.0	53 0	78.0	70.0	74.0	S.W.		S.W.	9		14	C.		C.		
Friday, ...28	29.94	54.0	63.0	52.0	70.0	63.0	66 0	W.		W.	9		9	O.		F.	3	.02
Saturday,.29	30.04	45.0	63.0	40.0	60.0	71.0	66.0	N.W.		N.W.	10		6	C.		C.		
Mean, the Week.	29.96		61.0	47.0			77.0											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FROM SEPTEMBER 29, 1888, TO OCTOBER 5, 1888

CRONKHITE, HENRY M., surgeon On being relieved by CAPTAIN CORBUSIER. will report for duty to the commanding officer, Little Rock Barracks, Ark., reporting by letter to the commanding general, Division of the Atlantic. Paragraph 10, S. O. 227, A. G. O., Washington, September 29, 1888.

ADAIR, GEORGE W., captain and assistant surgeon. Is relieved from duty at Fort Brady, Mich., and will report for duty to the commanding officer, Fort Robinson, Neb., reporting by letter to the commanding general, Department of the Platte. Paragraph 10, S. O. 227, A. G. O., Washington, September 29, 1888.

CORBUSIER, WILLIAM H., captain and assistant surgeon. On being relieved by CAPTAIN TAYLOR, will report in person to the commanding officer, Fort Hays, Kan., for duty at that post, relieving HENRY M. CRONKHITE, major and surgeon, and reporting by letter to the commanding general, Department of Arizona. Paragraph 10, S. O., 227, A. G. O., Washington, September 29, 1888.

TAYLOR, ARTHUR W., captain and assistant surgeon. Is relieved from duty at Fort Robinson, Neb., and will report in person, without delay, to the commanding officer, Fort Grant, Ariz. Ty., for duty at that post, relieving WILLIAM H. CORBUSIER, captain and assistant surgeon, and reporting by letter to the commanding general, Department of Arizona. Paragraph 10, S. O. 227, A. G. O , Washington, September 29, 1888.

By direction of the acting Secretary of War, the following-named officers of the Medical Department will report in person, on October 9, 1888, to the President of the Army Medical Examining Board, Army Building, New York City, for promotion:

MUNDAY, BENJAMIN, captain and assistant surgeon.

OWEN, WILLIAM O., JR., captain and assistant surgeon.

Upon the completion of their examination, to rejoin their stations. Paragraph 15, S. O. 225, A. G. O., Washington, September 27, 1888.

RAFFERTY, OGDEN, lieutenant and assistant surgeon, U. S. Army. Will stand relieved from duty in connection with the Division Rifle Competition, the 7th inst., and under Paragraph 6, S. O. No. 2, c. s., Headquarters Division of the Missouri, will return to his proper station, Fort Clark, Texas. Paragraph 5, S. O. 95, Headquarters Department of Texas.

DEATH.

Died, in Hamburg, Germany, September 27, 1888, Samuel Kneeland, M.D., M.M.S.S., of Boston, aged sixty-seven years.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING OCTOBER 6, 1888.

HUDSON, ADRIAN, medical inspector. Ordered to Naval Hospital, Mare Island, Cal.

GIHON, H. L, medical director. Detached from the Naval Hospital, Mare Island, Cal., and proceed home.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE FOUR WEEKS ENDING OCTOBER 6, 1888.

PURVIANCE, GEORGE, surgeon. To proceed to Washington, D. C., for special duty, October 3, 1888.

STONER, G. W., surgeon. Detailed as Chairman of Board to select site for Marine Hospital at Evansville, Ind., October 5, 1888.

GOLDSBOROUGH, C. B., surgeon. Leave of absence extended fifteen days, on account of sickness, September 28, 1888.

NORMAN, SEATON, assistant surgeon. Detailed as recorder of Board to select site for Marine Hospital at Evansville, Ind., October 5, 1888.

FATTIC, J. B., assistant surgeon. To rejoin station at St. Louis, Mo., October 5, 1888.

MAGRUDER, G. M., assistant surgeon. To proceed to Way Cross, Ga., for special duty, September 15, 1888.

GEDDINGS, H. D., assistant surgeon. To proceed to Camp Perry, Fla., for special duty, September 15, 1888.

BOOKS AND PAMPHLETS RECEIVED.

Morrow's Atlas of Venereal and Skin Diseases, No. 7. William Wood & Co., Publishers.

Martin's Druggists' Directory of the United States and Canada, 1888-89, containing lists of wholesale and retail druggists and various branches connected with the drug trade. Advertiser Publishing Company; principal office, 93 Federal Street, Boston.

The Physician's Leisure Library: The Theory and Practice of the Ophthalmoscope. By J. Herbert Claiborne, Jr., M.D. Detroit: George S. Davis. 1888.

Reversive Anomalies in the Study of the Neuroses. By Irving C. Rosse, M D., of Washington, D. C., Professor of Nervous Diseases in the Georgetown University. Reprint. 1888.

Transactions of the Medico-Legal Society, April Session. Presidency of Clark Bell, Esq. Reprint. 1888.

Original Articles.

TREATMENT OF PENETRATING SHOT-WOUNDS OF THE ABDOMEN.

BY W. B. COLEY, M.D.

This subject is one that excited but little interest in the medical world of ten years ago. It is true that the text-books on surgery abounded in statistics derived from the reports of the more recent wars, and especially our civil war, yet the more of these they contained the more strongly were you impressed with the one great fact, standing out before all others, that penetrating gunshot wounds of the abdomen were universally fatal, and recovery the rare exception.

The treatment of these wounds was summed up in a few words. The great masters of surgery both here and abroad were firm believers in the "Laissez faire" doctrine, and non-interference was taught from every professor's chair. Keep the patient quiet, fill him with opium, fold your hands and postpone making your diagnosis until you have had the benefit of an autopsy (an aid which will but rarely be denied you), comprizes the sum and substance of the old method of treatment.

It would be unfair not to mention some few but notable exceptions. Gulliver, of England, and Baudens, of France, in the early part of the century. Legourse and Thomassen later on, followed by Otis, Kinlock and Sims, of our own surgeons, boldly proclaimed their disbelief in the *let alone policy*. Some of them went so far as to put their theory to the practical test, yet so great was the weight of opinion on the other side, and so backed as it was by time-honored custom and tradition, that the advocates of interference scarcely obtained a hearing, and their teachings were quickly forgotten.

With the advent of antiseptic surgery the old question was again revived. While the profession at large was filled with wonder at the remarkable results of the ovariotomists, a few of the more thoughtful surgeons were asking themselves the question, "Is there any fundamental reason why we cannot apply these principles to gunshot wounds of the abdomen?" As early as 1882 we find Sims using these significant words: "I have the deepest conviction that there is no more need of a man dying of gunshot or other wound of the abdomen properly treated than there is of a woman dying of ovariotomy properly treated. Ovarian tumors were universally fatal until McDowell demonstrated the method of cure, which has now reached such perfection that we cure ninety to ninety-seven per cent. of all cases, and by the duplication of the same rules which guard us in ovariotomy to the treatment of penetrating gunshot wounds of the abdomen there is every certainty of attaining the same success."

What has been accomplished in the six years that have passed since those words were written shows that they were no idle words. Although as yet the prophesy of Sims has not been fully realized, enough has been done to prove that he was on the right track at least, while the constant improvement in methods and results as well, shows that we have by no means arrived at the limit of success.

I have spent a great deal of time in making a careful collection of all the reported cases of gunshot wounds of the abdomen treated by laparotomy, and I have tabulated them and arranged them in classes with the view of bringing out the more important points, both in reference to diagnosis and treatment.

My cases were most of them collected before I had seen MacCormac's tables, and the abstracts taken from the original reports of the operators themselves. Before considering these tables and the deductions to be drawn from them it might be well to take a brief glance at the history of the treatment of gunshot wounds of the abdomen. As I have already said, the old treatment consisted in keeping the patient absolutely quiet, and the giving of large doses of opium with the idea of stopping peristalsis, and allowing nature to affect the cure by forming adhesions.

The first case that I have been able to find in which laparotomy was resorted to is the one reported by Baudens, of France, in the *Plairs d'Armes à Feu*, of 1836. The bullet entered at the umbilicus and made its exit through the quadratus lumborum, wounding the intestine in two places. Baudens boldly opened the abdominal cavity, resected eight inches of the small intestine, and united the edges with the Lembert suture. Although the patient died on the third day, the autopsy revealed a wound of the cæcum which had not been discovered at the time of operation, and fæcal extravasation in the abdominal cavity. His second case proved to be a wound of the transverse colon. The abdominal wound was enlarged, intestine sutured, and the patient recovered.

In 1862, Kinlock, of South Carolina, did laparotomy on a man who had been shot in the abdomen seven months previously, but as the operation was done more to relieve the condition of obstruction resulting from the injury rather than to repair the actual injury, it can hardly be classed among these cases.

One of the most instructive of the early cases is that reported by Mr. T. N. Fitzgerald, of Australia. On February 9, 1882, he performed laparotomy on a young man who had shot himself with an ordinary shotgun loaded with small shot. He resected ten inches of the jejunum one foot from the duodenum, cut out a V-shaped piece of mesentery, sutured edges with fine carbolized catgut, washed out the cavity with 1–300 warm carbolic solution, made a counter opening in most dependent part of abdomen and inserted a drainage-tube. The patient lined 123 hours, and died of a general peritonitis. The external wound had sloughed, and the peritonitis had evidently been caused by an extension of the septic process along the track of the wound.

The autopsy revealed some interesting points. The external contour of intestine at the place of resection was so perfect that it required a very careful examination to detect the site of operation. The divided edges of the peritoneum were firmly united. The silk sutures were covered with lymph, and the catgut sutures had disappeared. On opening the bowel the edges of the mucous membrane were found in accurate apposition without any tendency to puckering or constriction.

Kinlock, of South Carolina, did a laparotomy for pistolshot wound of the abdomen in 1882, and although unsuccessful it did not shake his belief in operative interference.

The autopsy showed two additional wounds not found by the operator.

The results of operation thus far it must be con-

fessed were far from flattering. The few supporters still cling to their pet theory, but new converts were surprisingly few.

The successful case of Kocher, of Berne, in 1883, quickly followed in 1884 by the famous case of Dr. William T. Bull, of New York, really mark the beginning of the new era in the treatment of gunshot wounds of the abdomen. These cases are too well known to need a detailed description here. Suffice it to say they created a decided change in opinion both here and abroad, and the number of operations from this time on rapidly increased.

Although, first done in France, operative interference has never been looked upon with favor by the great body of French surgeons, and to-day, in spite of the very favorable results, there is a strong feeling against it. This feeling was clearly brought out by the recent discussion of this subject at the congress of French surgeons reported in *Revue de Chirurgie* of April, 1888. Laparotomy was advocated by M. Chauvel and Trelât, while the other side of the question was maintained with a good deal of spirit by M. Réclus.

He says that the existence of a penetrating wound of the abdomen by a revolver ball is to English and American surgeons an indication for immediate laparotomy. For them, perforation of the intestine is the necessary corollary of all penetrating wounds, and death the fatal result of all such wounds if left to themselves. He cites his own experiments to show that perforation is not necessarily present in a penetrating wound of the abdomen, since in one out of thirty-seven of his cases a bullet traversed that part of the abdomen occupied by the intestines without injuring them. He absolutely denies that every perforating wound of the intestine causes death, and says that this idea arose from two things — first, confusing revolver with rifle bullets; second, results of experiments on dogs. He claims that the conditions are more unfavorable in dogs on account of the much greater shortness of the intestine, and greater tendency to fæcal extravasation. In order to render the conditions more equal he gave a purgative previous to experimenting, and in this way he saved a number. In regard to the mortality of perforating wounds, he says that cure is quite frequent, and to support this statement he mentions the cases collected by Saint Laurent and Mr. Nogues, nearly fifty in number, in which recovery followed without laparotomy.

He further adds that no cases were admitted that did not have the pathognomonic signs of perforation; for example, hæmatemesis, bloody dejections, fæcal matter coming from wound, or expulsion of projectile by anus.

The plan of treatment advocated by Mr. Réclus is as follows: (1) Energetic compression of the abdomen to check hæmorrhage and fæcal extravasation; (2) administration of large doses of opium; (3) only when the above-mentioned precautions fail is laparotomy justified.

More light must be thrown upon some very important omissions in these statements of Mr. Réclus before he can have good ground for expecting the English and American surgeons to accept his views. Suppose we accept his fifty cases of recovery without operative interference, though from the signs of perforation which he mentions as pathognomonic, we are by no means forced to accept them. Dr. P. S. Connor says, "there is no single symptom that can be relied on as diagnostic of perforation. The vomiting of blood or bloody stools may *both* be the result of contusion." This rules out two of the four so-called pathognomonic signs that Réclus lays down, leaving only "fæcal matter issuing from the external wound, and expulsion of the bullet per anum." Among the seventy-four cases which I have collected in which laparotomy has been done, there is scarcely a single one in which either of these signs were present, hence it is quite probable that the diagnosis of perforation, in the majority of the fifty cases, rested upon bloody vomiting and bloody stools. Yet, overlooking all this, and accepting all of the cases as authentic, what do they prove? absolutely nothing until we are told how large a number of cases that *did not* recover were found, before getting the fifty cases that *did* recover. Such an omission makes it utterly impossible to compare the results of the two methods of treatment.

Dr. E. M. Moore has collected 4463 cases of shot wounds of the abdomen. Of these 3662, or 82.7%, died. He says that to these should be added a certain number who died without medical attendance, which would probably make the percentage of recoveries less than 10%. Of all these there were only five cases of recovery from wounds of the *small* intestine.

There were 650 cases of penetrating wounds of the abdomen reported in our civil war, yet Dr. Otis, in the "Surgical History of the War of the Rebellion," says: "It may be doubted if a single uncontestible case of recovery from shot wound of the small intestine was observed."

Such, then, are the results of the "let alone" policy.

Let us now see what results have followed interference.

The seventy-four cases that I have collected I have arranged and tabulated in three classes, with reference to the tissue intervening between the injury and the operation.

Class I contains only those cases operated on within the first twelve hours.

Class II contains cases operated on after twelve hours.

Class III contains cases in which the time of operation could not be ascertained.

Class I contains 39 cases. 18 recovered, 22 died. Percentage of recoveries, 43.6%.

Class II contains 22 cases. 5 recovered, 17 died. Percentage of recoveries, 22.7%.

Class III contains 13 cases. 7 recovered, 5 died, 1 doubtful. Percentage of recoveries, 57%.

The above classification shows very clearly the advantage of an *early* operation, the percentage of recoveries in cases operated on during the first twelve hours being nearly double that of cases operated on after twelve hours.

Total number of cases operated on	74
Number of recoveries	29
Percentage of recoveries	39.5

Causes of Death in the Cases that did not Recover.

Hæmorrhage	4 cases
Peritonitis	9 "
Shock	8 "
Wounds not found by operator	4 "
Pneumonia	1 "
Acute Pericarditis	1 "

Average time patient lived after operation, in twenty-seven cases, was 26 hours; which he had treated by laparotomy.

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.— CLASS I.

Operator and Reference.	Age and Sex.	Size of Bullet.	Distance	Int. bet Injury and Opera.	Character of Injury.	Condition of Patient.	Details of Operation.	Subsequent Progress.	Autopsy.	Result
Prince, David. Trans. Am. Surg. Assn., 1887, cxii.	M 30	22 rifle	long range	2 h.	Ex. wd., 1 in. above middle of crest of ileum. wd. of colon.	Pain in r. inguinal region, T. 99.8°.	Non-med. incision. Intestines taken out and examined. Colon sutured. Time, 1 h. 40 m.	Following wk., T. 99.5°–102°; good deal nausea and vomit'g. 18th day, T. 103°. 45th day pain severe, constipation, 372 c. c. pus aspirated.		R
Prince, David. *Ibid.*	M adult			6 h.	5 wds. small intest. 2 wds. of bladder.	Condition fair, shot by a mob (Several other wds.)	Laparotomy. Wds. of bowel sutured, cavity washed out.	Patient died 12 h. after operation.		D
Ramsay. North-west. Lancet, Aug., 1885.	M 7	32		6 h.	Ex. wd., 2 in. r. med. line, 3 in. above umb. 1 wd. duodenum, contusion of colon.	Profuse exter. hæmor. Frequent vomiting, no blood, cold. T. 97.5° Blood, gall and mucus oozed from wd.	Med. incision. Temp. of operating room raised to 100°. Abdominal cavity full of bright red blood, cav. washed out with 1-1000 bi-chloride.	Patient did not rally and died 1 h. later from hæmor. probably.		D
Sevastopoulo. (1880). Bull. et Mem. de la Soc. de Chirg., xiii., 1887, 273.	M 30	5.5 m. m.		1 h.	Ex. wd., middle of line between right iliac spine and umbil. Large oval wd. small intest.	Cold and pale. Fæcal fluid escaping from wd.	Laparotomy. Wd. enlarged to 6 in. About a quart of blood and clots in cav. Wounded portion resected and edges invaginate.. Cavity washed with carbolic sol.	Patient recovered with no bad sympt.		R
Skelley. Ann. Surg. July, 1887, 49.	M 21			2 h.	Ex. wd., 2 in. below and 3 in. r. of umb. No wound of intest. 6 bullet wds. different parts of body.	Pale, weak, pain r. iliac region.	Med. incision from umb. to 1 in. above pubes. Cavity washed with carbolized rain water.	In bed 21 days. Wd. healed without drop of pus.		R
Smart, W. F. B. M. J., 1835, I, 379.	M adult	80 gr.	9 ft.	½ h.	Ex. wd., r. side over 6th rib, 1 in. from sternum. Wd. of liver.	Extreme collapse.	Given 60 gtt. of laudanum. No anæsthetic. Incision 2½ in. long over edge of cartilage of 8th rib. Bullet found imbedded in liver.	7 h. after operation patient in a state of extreme collapse. Retu'd to work in 18 days.		R
Pozzi. Revue de chir., 1887, 1, 78.	13	7 c.		8 h.	Three wds. of small intest. and 3 contused wds. of intest. Wd. of bladder	Vomiting and bloody urine.	Bowel partially resected. Med. incision. Intra-peritoneal infiltration of urine. Time of operation, 2½ hours.	Patient died in 60 h.	None.	D
Parkes, C. T. Ann. Surg., Nov., 1887.	M adult			4 h.	5 perforat. wds. of small intest. and left kidney.	Vomited blood.	Laparotomy. Med. incision. Kidney not removed.	Death in 24 h. after operation, from bleeding from kidney wd.		D
Freyer. Deut. Med. Woch. July 15, 1886.	M 19			6 h.	Intest.	Collapse.	Abdominal wd. enlarged. Intestines resected.			R
Morton, T. G. Unpublished.	36			1½ h.	4 wds. stomach. 1 t. colon, wd. omentum.	Pain, no shock, vom. copious and bloody.	Laparotomy. Lembert suture. Abdominal cavity washed out.	Patient died at end of 3 days.	None.	D
Murphy, J. B. Jour. Am. Med. Assn., March 10, 1888.	M 26			2 to 3 h.	Ex. wd., 1½ in. below umb. 11 wds small intest.	Little shock, T. normal, P. 90 no pain, in good condition, no vomiting.	Med. incision, 3½ in. long, 1½ % solution for cavity. (Carbolic)	Patient died in 7 h.	Large amount blood in cav., and hole in renal artery.	D
Murphy, J. B. *Ibid.*	M 22			2 h.	Ex. wd 1 in. above and 2 in. to r. umb. wd. of liver, no wd. intest.	P. 66 (good vol.) some shock.	Med. incision. Abdom. cavity full of blood and clots. Time, 30 minutes.	Temp. did not go above 99°. 10 days later bullet removed from back discharged well 20th day.		R
Murphy, J. B. *Ibid.*	M 57	38	15	3 h.	Ex. wd., level with 9th rib and front of ax. line. Wd. of liver, 2 wd. of t. colon.	P. 78 (strong), no shock.	Non-med. Fæcal extravasation. The two openings in colon converted into one long slot. Time ¾ h.	10th day dress'g remov'd. Complete primary union.		R
Murphy, J. B. *Ibid.*	M 26			2 h.	Ex. wd., r. side, jut below ribs, ax. line, second wd. 2 wds. stomach none of intest.	Profound sh'ck collapse.	Med. incision. Had been given 2 subcutaneous injections of morph. sulph. gr. ⅓, and showed symptoms of opium poison.	Patient died in 13 h.	Abdominal cav. clean, no blood.	D

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.— CLASS I. (*Continued.*)

Operator and Reference.	Age and Sex.	Size of Bullet.	Distance	Int. bet Injury and Opera.	Character of Injury.	Condition of Patient.	Details of Operation.	Subsequent Progress.	Autopsy.	Result
McGraw, T. A. Ann. Surg., Nov., 1887.	F 24	32		9 h.	Ex. wd., 2 in. above and inter. r. ant. sup. spines of ileum. 2 wds. a. colon.	Bowels moderately distend. P. 120, T. 102° vomited bile, great pain, no heptic reson.	Non-Med. incision. 4 in. long, parallel with fibres of ext. oblique. Czerney-Lembert suture.	Temp. 2d and 3d day 102°. 6th day 99°. Discharged 6th week.		R
Newell. B. M. J., Feb. 11, 1882.	male adult	shot gun	near	few h.	Small intest.					R
Parham, F. W. New Orleans M. and S. J., xiv, 508.	M 34	38	near	1½ h.	Ex. wd., 2 in. r. med. line, 2 in. bel'w umb. Wd. small intest., a colon, bladder.	Shock, rapid P. great distention, rapid respiration.	Med. incision 3½ in. long. No blood nor urine found. Intestines not turned out, and cavity sewed up. Large wd. of bladder felt by rectal examination.	Drainage-tube into bladder through rectum. Death in 44 h. after operation.	Wd. of bowel not found at operation.	D
Packard. Med. News, Mar. 26, 1887.	M 33	38	near	1½ h.	Ex. wd., 2 in. l. and 1½ in. below umb. 11 wds. small intest., 1 of ileo-cœcal valve, ex. wd. iliac vein.	Marked collap. T. 97.5°, P. 120, vomited food and a slight amt. of blood.	Med. incision from umb. to just above pubes. No fæcal matter in cavity. Considerable blood.	Patient steadily sank, death in 17 h.	Slight evidence of peritonitis.	D
Carson, N. B. St. Louis Courier Med., Mar., 1887.	M 29			6 h.			Laparotomy. Bowel sutured. Drainage-tube.			D
Fox. Med. News, li, 567.	M 18		near	3½ h.	2 wds. small intest., 2 wds. t. colon. Ex. wd. 1½ below umb. 1½ l. med. line.	Fair. P. 110, T. 98½°.	Med. incision. 2½ in. above, to 4 in. below umb. Lembert suture. Rubber drainage-tube. Time, 1 h. 10 m.	Discharg'd well 4 weeks.		R
Hamilton. Trans. Am. Med. Assn.	M 19	32		2 h.	11 wds. small intest., 2 a colon, 1 mesentery.		Med. incision. 6 in. long.	13th day, grave rectal tenesmus, due to fluctuating tumor in pelvis. Rectal incision. 3 pints pus evacuated.		R
Keen.	F 18	32		10½ h.	Liver, stomach, kidney, sup. mes. artery and vein. Ex. wd., 4½ in. above and 3½ r. med. line.	Moderate tenderness, hepatic dulness not changed, pale, weak, consid. pain. Vomited 1½ pure blood.	No blood or serum in cavity, no fæces, no signs of peritonitis. Deep cut wd. of kidney. Kidney remov'd but peritoneum not sutured on account of weak condition of patient.	Patient died 15th day. Did well 4 days then had chill T. 104°, next day a second. T. 105.4°. Badly reopened, and explored.	General peritonitis caused by gangrene of a contused portion near mesenteric border.	D
Kinlock, R. A. North Caro. Med. J., 1882, 10.	adult			11 h.	5 wds. small intest., 2 mesentery.	Slight shock, pain in abdomen and sac'l region.	Laparotomy. Wds. sutured with Lembert suture.	Patient died in 10 h.	2 other wds. of bowel not found at the operation.	D
Kinlock, R. A. Trans. Am. Surg. Assn., 1887.	M 27	38	near	5 h.	6 wds. small intest., 2 wds. mes. Ex. wd. 1½ in. l. umb.	Slight shock, P. 88, T. 99°, condition good.	Med. incision, 8 in. long. Good condition at end of operation.	3d day, T. 102°, slight vomit. Death 4th day	Abdomen much distended, no adhesions, ½ pint sanguinous fluid in cavity; gaping wd. mesentery.	D
Kocher.	M 14			3 h.	Ex. wd., near navel. Wd. of stomach. 1½ in. in diameter.	Severe abdominal pain, hiccough, vomiting, pallor, tympanites, collapse.	Large amount of dark blood in abdominal cavity. No aperture of exit from stomach. Found silk and catgut suture.	Recov'ry delay, somewhat by formation of an abscess in abdominal wall.		R
Kollock, C. Med. News, 1887, 4:0.	M col. 15½	38	6	7 h.	2 wds. d. colon. 1 wd. small intest.	Restless, anxious, hepatic reson., tymp. subnormal, emphysema at edges of wd.	Med. incision. 3 in. long, abdominal cav. washed out with warm carbolic. Considerable amount of blood and fæcal matter in cavity.	Patient recov'd without a single bad symp. Sutures removed 8th day, wd. healed by 1st intention.		R
Lutz. St. Louis Courier Med., '86, 16, 260.	M 21	22		10 h.	6 wds. jejunum, 4 wds. mes.		Laparotomy. All wds. closed with Lembert suture.	Temp. gradually rose and patient died 65 h. after operation.	Considerable sero-sanguinous fluid in cavity, bowels glued together.	D
Manly. Trans. Int. Med. Cong. Med. News, Sept. 24, 1887.				2 h.	2 wds. d. colon, wd. sup. mes. artery.	Abdom'n much distended, evidence of fluid in cavity	Med. incision. Double perforat. colon. Wd. of inf. mes. artery. ½ gal. blood escaped. Artery ligatured.	Abdominal wd. did not unite by 1st intention. Recovery delayed.		R

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.— CLASS I. (*Continued*).

Operator and Reference.	Age and Sex.	Size of Bullet.	Distance	Int. bet Injury and Opera.	Character of Injury.	Condition of Patient.	Details of Operation.	Subsequent Progress.	Autopsy.	Result
Abbe, Robert. Ann. Surg., 1886, 4, 475.	M		2 ft.	6 h.	4 wds. small intest., 1 bladder.	Slight shock. Vom. once. P. 90, moderate tymp.	Med. incision. 1 pint green watery fluid with lymph and fæces in abdomen cav.	Did not come out of ether well. Restless and died 9 h.	12 oz. fluid in abdominal cav.	D
Annandale, T. Lancet, 1885, 1, 740.	M			1 h.	5 wds. small intest., 2 colon, 2 rectum.	Shock, pain in abdomen slig't, consid. hæm.	Laparotomy. All wds. closed with Lembert suture.	Death in 24 h.	Wds. watertight, no more found.	D
Barker, A. E. B. M. J., March 18, 1888.	M	60 gr.	near	3½ h.	Ex. wd., level of lower end of sternum, 1 in. from med. line. No wd. intest., 2 oz. clots, wd. of omentum.	No vom., moderate shock, no dulness, tenderness marked. T. 98.2°.	Med. incision. Ecchymosis of liver. No wd. of viscera.	Temp. rose to 103°, fell to normal and remained. Discharged well 21st day.		R
Barker, A. E. *Ibid.*	M 37	143 gr.	near	5 h.	Ex. wd. just int. r. sup. iliac spine. Second 3 in. from first 2 wds. small intest.	No shock.	4 in. incision, parallel to fibres of ext. oblique muscle only ½ in. between 2 wds. of intestines. 3 to 4 oz. blood clots.	Did well for 6 days and then died without any apparent cause.	Wds. of bowel all healed. 5½ oz. bloody serum in cavity Hypostatic pneumonia in both lungs.	D
Bolles, W. Not reported. (City Hosp., Boston.)	F 34	32	2-3 ft.	6 h.	1 wd., stomach, 2 jejunum, 2 t. colon.	Shock, vomiting, pulse feeble and rapid.	Non-med. incision. 6 in. long. Considerable blood in cavity. Slight trace of fæcal matter.	Did not rally from operation well. Pulse could not be felt at wrist. Died in 6 h.	Wds. all tight. No more found.	D
Brown. Med. News, Feb. 18, 1888.	M 32	38	15 ft.	12 h.	Ex. wd., level with umb. 3½ in. r. of med. line. No perforation intest.	6 hours after injury P. 95, T. 100°. 12 h. after, P. 120, T. 103°. No shock.	Med. incision from umb. to pubes. No wd. of intestine, but 6 oz. bloody serum. Cavity washed 1 to 6000 bichloride. Time operation 1½ h.	Wd. dressed 5th day almost healed.		R
Bull, W. T. Med. News, xlix, 607, (4th).	M 24	44		6 h.	4 perforated wds. 2 jejun. 2 colon.	T. 98°, P. 92, hepatic dulness dim., no distension.	Incision from 2 in. above pubes to 3 in. below sternum, mesocolon stained with blood. Time of operation 1¾. 1 to 100 carbolic.	Patient died in 8 h. Reacti'n was imperfect. Dr. B. thinks death was due to shock.		D
Bull, W. T. Trans. News, (3d) xlix, 524.	M 25	38	near	2 h.	Ex. wd., 2 in. below umb. 2 in. l. med. line. 2 wds. side intest., 1 sig. flexure, 1 sig. mesocolon.	Tenderness on pressure, no emphy. above wd.	Med. incision. 7 oz. bloody serum in cav. No fæces. Piece of bleeding omentum tied and cut off.	Recovery delayed by giving way of sutures.		R
Cupples. Daniels Tex. Med. J., vii, 10, 1.	F		near	1½ h.	4 wds., small intest.		Med. incision 4 in. long large hæmorrhage in cavity. Time, 1 h. 55 m.	Patient died in 5 h. Reaction imperfect.		D
Fitzgerald, T. Austral Med. J., 1883, v, 33.	M 20	shot gun	near	1 h.	Ex. wd., r. lumb., reg. 3½ in. long. Protrusion of small intest.		Wd. enlarged. 10 in. of jejunum resected and a v shaped piece of mesentary.	Death in 123 h. External wd. sloughed and death from peritonitis.	Bowel on line of resection perfectly united. No constriction.	D
Park, Roswell. Med. News, Aug. 4, 1888.	M 32			6 h.	Ex. wd., just below margin of liver. Shot through body. 2 wds., small intest., 1 wd., mesentery.	Severe shock.	Laparotomy. Chloroform. Med. incision. Large amount of blood in cavity. Time of operation 1 h. 40 m. Irrigation. Drainage. Rallied well.	Patient died in 53 h. after injury from acute pericarditis.	No peritonitis. Wds. healed.	D

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.— CLASS II.

Operator and Reference.	Age and Sex.	Size of Bullet.	Distance	Int. bet Injury and Opera.	Character of Injury.	Condition of Patient.	Details of operation.	Subsequent Progress.	Autopsy.	Result
Andrews, E. Chicago Medical Jour. and Exam. Aug., 1887.	F adult		long range	16 h	Ex. wd. 2 in. down and 1 from ant. sup. Spinal process of ileum. 1 perfor. intest.	At first wd. not thought to be penetrating. Evidence of peritonitis at time of oper.	Small incision (med.), abdomen full bloody serum. Intestines red and adherent.	Pulse hardly felt and death next day.	None.	D
Billroth. R. von Hacker, Billroth Klink., 1886.	F 63			32 h	Under nipple, 7th intercostal space. Wd. stomach, liver aorta, kid., r.	Great pallor. Small pulse, bloody vom., tympanitis.	Transverse incision 6 in. long from lin. alba to 6th rib, 7th and 8th ribs resected, 29 Lembert suture.	Died following eve., periton. and pleuritis. Bullet found in r. kidney.		D
Briddon, N. Y. Med. Jour., 1887, xlv, 75.	F adult		near	17 h	Ex. wd. 3½ in. above umb., 1½ in. l. of med. line. 2 wds. stomach 4 jejunem.	No collapse. P. 80 and regular. T. 101.4°. Vom. thick, dark, slight tympanitis.	Med. incision, ensiform cartilage to umb. condition critical. Time of operation 2 h.	Died 3d day of acute periton.	4 wds. jejunum not found at operation.	D

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.—CLASS II. (*Continued.*)

Operator and Reference.	Age and Sex.	Size of Bullet.	Distance	Int. bet Injury and Opera.	Character of Injury.	Condition of Patient.	Details of Operation.	Subsequent Progress.	Autopsy.	Result
Bull, W. T. (1st). Med. News.	M 22	32		17 h.	Ex. wds. 1½ in. below umb., 1½ in. to l. 7 wds. small intestine.	Abdominal tenderness. No tymp. Warm conscious, vom. food, much abdom. pain. T. 97.8° P. 96.	Exploratory incision over wd. Then med. incision, 2 pts. bloody serum and clots in cavity. 7 wds. small intest. found; time of oper. 2 h.	Pulse went up to 142, r. 52 during oper. and breathing stopped. Delayed healing of abdom. wd. Perfect recov.		R
Bull, W. T. (2d). Ann. Surg., St. Louis, 1886, 4, 479	M 57	32	near	12½ h.	Ex. wds. 3 in. above umb. 1½ to l. wd. of exit r. side med. line, half way bet. ribs and crest of ileum, wd. of liver.	Pale, surface of body cold. T. 94°. (ax.), P. 100. Shock from loss of blood.	Laparotomy in hope of stopping hæmor. intest. floating in blood sponged out, rapidly refilled. P. began to fail before hæmor. could be checked.	Died ½ h. from time of ether was begun.	No wd. except of liver.	D
Dandridge. Trans. Am. Surg. Assn., 1887, 216.	M 30	38	near	19 h.	Ex. wd. 1½ in. l. of med. line 3 in. below umb. 10 wds. small intest.	Little pain, no distension, T. 97.4°, no vom.	Laparotomy. Evidence of peritonitis. Cav. washed out with 1-10000 bichloride.	Died at end of 43 h.	All wds. firmly closed. No new ones.	D
Gaston. Med. and Surg. Reporter, Phila., Vol. liv, 7, 39.	M 30		near	96 h.	Ex. wd. intest. below end last rib, l. side abrasion colon.	Intense pain in abdo'n. Great prostration, almost pulseless. T. 103°. (4th day).	Laparotomy 96 h. Dr. G. not called till then. Med. incision. Intest. greatly distended. Considered decom. bloody fluid in cav.	Died soon after oper.	Colon so firmly bound down by adhesion ail passage stopped.	D
Jersey. Med. Rec., Oct. 16, 1886.	M 44	32	near	20 h.	5 wds. small intest. 2 of mes.	Intense abdom. pain and tenderness. No tymp. Pulse rapid, full. T. 98°, no vom.	Med. incision. 3 inches above to 9 in. below umb. Bloody serum in cav. Cav. washed with warm water.	T. 102° and contused so to 4th day, retching, vomiting great restlessness.	Edges of mes. wd. separated and sloughing	D
Lloyd. B. M. J., 1883, 1, 560.	F 19			72 h.	Ex. wd. l. and below umb. 2 wds. sigm. flexure, contused wd. of small intest. and bladder.	Little shock, no vom. Pain.	Abdom. cav. considerable amount of foul smelling brown fluid Wd. of intest. ¾ in. drainage stitched to wd.	Died 2 h. after operation.	Contused wd. of blad. and wd. of mesenetry, formed.	D
Lange. Med. News (2), 1887, 630.	M 14	22		24 h.	Ex. wd., ¼ in. below, 1 in. l. med. line. 7 wds. small intest.	No shock. P. 11[illegible]. No pain great tenderness, some tymp. abdom. tenderness.	Laparotomy in line of bullet wd.	Recov. without a bad sympt.		R
Makallar. Lancet, 1887, 1, 37.	M 22			33 h.	Ex. wd., to l. and below umb. 2 perforations sig. flex. Contused wd. small intest. Wd. of bladder and rectum.	Pain. Collapse, vomiting, no blood in urine for 12 h.	Laparotomy. 2 wds. of sig. flexure found and contused wd. of small intest. Autopsy showed others.	Died 12 h. after oper. Bullet found in post. wall of bladder.	Fæcal matter and clots in cav. and wd. of rectum found.	D
Mudd, H. H. Jour. Am. Med. Assn., 1887, 579.	M 17			72 h.	Wd., liver and stomach.	Good.	Laparotomy. Wd. of stomach sutured.	Died.	Wd. of sternum healed; extr. of blood in nasocolon.	D
Park, A. V. Jour. Am. Med. Assn., 1885, 5, 494.	M 16	22	45 ft.	22 h.	Ex. wd. midw'y bet. sym. pub. and umb. 2 in. left. 2 wds. small intest.	Great exhaus. P. 130, weak, T. 100°, tymp.	Laparotomy. Incision over wd. Cav. washed with 1 per cent. of carbolic solution.	Died 16 h. after operation.	Peritonitis extrav., blood in cav. Contused wd. of intest. found.	D
Parkes, C. T. Ann. Surg., Nov., 1877.	M 45			16 h.	Ex. wd., 2 in. inside r. iliac spine. 1 wd. small intest., large size.	Fiery red blush over half of abdom. Thoracic breathing. Abdom. wall hard.	Laparotomy. Med. incision. One large wd. of small intest.	Died 16 h. after oper., apparently from shock.		D
Priddy. Jour. Am. Med. Assn., ix, 649.	M 60 col.	32 S & W	near	108 h.	Lacer. wd. d. colon, 6 in. long. Wd. of mesocolon, f. mesentery and jejunum.	Rode a horse 4 miles after injury, when seen. Prof. shock, pulse rapid and wk. Great abdom. pain. No vom. Hiccough.	Laparotomy. Med. incision from umb. to pubes. Considerable quantity of bloody serum and pus in cav 1-1000 bichloride. wds. packed with iodoform Drainage-tubes.	Oper. lasted 55 min. came near dying on table. 2 days later, P. 180 and apparently dying. Perfect recov. 6 weeks.		R
Richardson. New Orleans Med. and Surg. Jour., xlii, 867.	M adult	38	5	14 h.	Ex. wd., level with umb., ½ in. l. 3 wds. small intest., 1 mesentery.	Great pain, legs flexed. Tenderness diffus. Profound shock.	Laparotomy. Large amount blood in cav. Cav. quickly refilled. Time 1½ h.	Died 14 h. after oper. in collapse.		D
Seymour. N. Y. Med. Jour., xliv, 209.	M 16	32		13 h.	Ex. wd., 2 in. above umb., and ¼ l. of med. line. 2 wds., colon, 1 duod., 1 mes.	Vomited, great prostration. P. 100, severe pain but little tenderness.	Laparotomy. Med. incision 4 in. above umb. to 3 below. Intest. distended, brick red color in lustre. 2 in. color resected.	Death in 8 h.	Intest. Slight adherent, wd. united.	D

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.—CLASS II. (*Continued*).

Operator and Reference.	Age and Sex.	Size of Bullet.	Distance	Int. bet Injury and Opera.	Character of Injury.	Condition of Patient.	Details of Operation.	Subsequent Progress.	Autopsy.	Result
Andrews. Jour. Am. Med. Assn., Aug. 15, 1885.		38		15 h.	Ex. wd., border of cartilage of ribs, l. of umb. No wd. intestines.	Moderate sho'k Vom. consid. blood.	Laparotomy Med. incis. Considerable bloody serum. No clots nor fæcal extrav.	Vom. after oper. but no blood.		R
Trélat. Gazette d' Hop., April 16, 1888.	F adult			22½ h.	Ex. wd. near umb. and to l. med. line. 2 wds. small intestines.	Pulse irregular pallor, meteorism.	Incision non-medium, through wd. and parallel with linea alba. No blood in cavity, no pus, no extrav. fæces. Time 1½ h. Lembert sutured.	Death 20 h. after operation. No rise in T.	Heart and liver very fatty and lungs congested.	D
Warren.	M 18	38		24 h.	Ex. wd., midway bet. umb. and ant. sup. spines ileum, 5 wds. of intest., 2 mes.	Pulse feeble, rapid. T. 96°. Legs flexed on thighs and thighs on abdomen.	Laparotomy, Med. incis. Umb. to pubes. Time 1½ h.	Death 14 h. after oper.		D
Frick, A. P. (U.S. Army). Phila. Med. Times, xviii 459.	M 57	44	1-2 ft.	6 d.	Ex. wd., midway bet. axil. and ant. sup. spine ileum, 5½ in. from med. line, r. side, second wd. of exit, 1 in. lower. Fract, 4th, 8th 9th ribs; long wd., liver.	Not found until 25 hours after injury. Brought to Camp hospital 2 days later. T. 99.2°. Third day T. 101.1°. Fourth day T. 102°.	Laparotomy. incision bet. wds. of entrance and exit. 6 in. long. Ribs resected. Long laceration wd. of liver. Abscess of liver 1½ in. deep. Time 35 m.	Lacerated part removed. Irrigated 1-1000 biehloride. Drainage tube, discharge of bile 10 days. Well 10 weeks.		R
Labbé. Revue d' Chirurgie, April, 1888.	M 29			15 h.	5 double perforations ileum 1 wd. mesentery.	Cold, almost pulseless, syn. T. 36°. 1 c. Collapse.	Laparotomy. 1½ qts. blood in cav. Wd. of mes. Source of considerable hæmor. Peritonitis began. Large amount of fæcal matter in cavity. Irrigated with boiled water. Time 1 hour, 10 minutes.	Seemed a little better after oper., but died 20 h. after oper.		D

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.—CLASS III.

Operator and Reference.	Age and Sex.	Size of Bullet.	Distance	Int. bet Injury and Opera.	Character of Injury.	Condition of Patient.	Details of Operation.	Subsequent Progress.	Autopsy.	Result
Dennis. Med. News, 1886, 225–253.	M 23	32			Ex. wd. 1 in. below stern. No intest. wd. Wd. l. lobe liver. Wd. portal vein.		Laparotomy. Med. incision. Abdominal cav. full of blood, tremendous hæmor. from liver wd. Patient become nearly pulseless. Transfusion 12 oz. of salt solution into radical artery.	Rapidly sank and died of hæmorrhage.	No wds. of intest. found.	D
Dennis. *Ibid.*	F 26	32			Ex. wd., ½ in. l. umb. 7 wds. small intest., 1 wd. mes. Wd. iliac veins.	Profou'd shock T. 100, but little abdomin'l pain. Hep. resonance.	Laparotomy Med. incision. Abdominal cav. full of venous blood. Deep seated hæmor. that could not be controlled. Oper. had to be stopped. 7 wds. intest. sutured.	Lived 48 hours was stimu.ated every few minutes.	No more wds. found.	D
Griffith. North-West. Lancet, 1885, iv, 412.	M									R
Legourse. Quoted by Dennis										R
Legourse. *Ibid.*										R
Baudens. Chirurgie d'Arme					Ex. wd. near umb. 2 wds. small intest.		Abdom. wds. enlarged. 8 in. intest. resected.		A wd. of cæcum and fæcal extrav.	D
Baudens. *Ibid.*					Wd. t. colon.		Fæcal extravasation abdom. wd. enlarged. Intest. sutured.			R
Hedden, J. W. Trans. Mo. State Med. Assn., 1886.	M 30				Ex. wd. Epigastrum. wd. of liver.	Great pain in side and back, dyspnœa.	Laparotomy. Incision through wd., 5½ in. long. Piece of clothing and 4 oz. blood removed from abdom.	Recov. with no bad symp.		R
Pirogoff. Ladzenbeck's Archiv., xxvii, 278.	adult				Ex. wd. near umb. 4 perforated wds. small intest. 4 in. resected.		Laparotomy.	Case was lost sight of at end of 5 days. Was then doing well.		?

PENETRATING SHOT-WOUNDS OF THE ABDOMEN.—CLASS III. (*Continued.*)

Operator and Reference.	Age and Sex.	Size of Bullet.	Distance	Int. bet Injury and Opera.	Character of Injury.	Condition of Patient.	Details of Operation.	Subsequent Progress.	Autopsy.	Result
Case, C. E. Med. News, Sept. 24, 1887, 379.	M	32			Ex. wd., 2 in. from umb. 2 wds. of bowel		Laparotomy. Considerable quantity of blood in abdom. cav. and a doubtful wd. of intest.	No bad symp.		R
Pickett, M. Med. Press, W. N. Y., 1886, 5, 6, 1, 247.	M 13				Wd. abdominal wall.	No shock.	Exploratory laparoto'y			R
Dean, D. W. Unpublished. St. Louis City Hosp.	M 16				Wd. intestines.	Condition at time of oper. not known.	Exploratory laparoto'y intest. sutured and cav. cleansed.			D
Nancrede, C. B. Phila. Academy Surg., 1886.					2 wds. stomach 2 wds. duodenum.	Little pain or shock, bloody vom. later.	Laparotomy. Lembert sutured.			D

He said: "What I wish to emphasize as bearing on the application of laparotomy to the treatment of wounds of the abdomen is that many cases present none of these symptoms; that the sudden onset or the development of a general peritonitis is the first indication of intestinal wound; and again, that a bullet that has entered the abdominal cavity in the region occupied by the intestine is much more likely to injure the gut than not. Experiments have shown it possible to avoid the gut on the cadaver, but clinical evidence is lacking to support it."

Dr. Moses Gunn, of Chicago, says: "I think we are fully warranted in resorting to laparotomy for our *diagnosis*," and I believe the best American surgeons hold this opinion. The analysis of these seventy-four cases treated by laparotomy furnishes very strong evidence in favor of this method of treatment.

The percentage of recoveries is constantly increasing as the technique of the operation is becoming better understood. There is one very important as well as very practical question upon which the leading surgeons seem to be divided; namely, shall operative interference be confined to our large and well-equipped hospitals, with their skillful surgeons, or shall we give it a wider application, and carry it into the country and village practice?

The remarkable cases reported by Dr. Priddy, of Virginia, and Dr. Kollock, of South Carolina, show what can be done in the latter field and under the most unfavorable conditions, and justify us, I think, in extending this method of treatment to all cases in the country as well as the city.

A CASE OF VOLVULUS.[1]

BY J. COLLINS WARREN, M.D.

EXAMPLES of this affection are so rare that the notes of this case, though brief, seem worth recording.

Mr. M. fifty-two years of age, had enjoyed good health as a rule previous to his last illness. He had, however, had three mild attacks of bilious colic, during which he was attended by Dr. James B. Ayer. The first of these occurred December 20, 1883; the second, July 15, 1884; and the third, August 26, 1885. During one of these attacks icterus appeared. In 1886, Dr. Ayer consulted me about some enlarged glands in the patient's neck, and a fulness of the abdomen; but his general condition appeared to me at that time quite good.

[1] Read before the Boston Society for Medical Improvement, May 23, 1888.

About July 15, 1887, Mr. M. was taken with another attack of colic, the pain being chiefly at the right of the epigastrium and also in the back, but improved rapidly after a subcutaneous injection of morphine administered by Dr. James Ayer; but on July 22d, the pain returned. Dr. Ayer writes that he had from the first but little appetite, and resisted taking much nourishment, and suffered from inanition throughout. the pulse, temperature, and urine, were at this time normal. Early in his illness he called in a man who practiced massage upon him. Dr. Ayer cautioned him against the use of too much force; and, at his suggestion, the massage was finally abandoned. The abdominal pain became gradually more intense, but it did not prevent him from going out for a short time daily. It was sufficiently severe to require a hypodermic injection of one-quarter to one-third of a grain of morphine subcutaneously, followed by the use of laudanum during the night.

During the last few days of his illness the abdominal pain became more severe, and morphine was given every three or four hours; the abdomen became harder and more prominent. There was no vomiting at any time; the bowels were regular during the first week and then became loose.

On August 8th, Dr. Ayer called in Dr. Fitz, in consultation whose diagnosis is given in his own words:

"The symptoms were not especially urgent until, a short time before my visit, an elevation of temperature and a rapid pulse had been observed for a few days; the abdominal pain was situated near the navel; micturition was scanty and painful. I made no note of the duration of the intestinal obstruction, but am satisfied it was very acute, as the patient's condition gave rise to but little alarm until within a short time of my visit. He appeared anxious, and suffered chiefly from paroxysmal pain near the navel, with a constant feeling of distress in that region. The physical examination of the abdomen showed a moderate general distension, but a deep-seated resistant tumor as large as an infant's head near the navel. It was elastic, sharply defined above, but became gradually lost on palpation downward. Percussion over the tumor gave a dull resonance, and there was dulness in the flanks and in the hypogastric region. The condition was regarded as one of intestinal obstruction (a twist or incarceration); and immediate surgical interference was considered essential."

On seeing the patient with Drs. Ayer and Fitz the same afternoon, it was evident to me as well as to them, that the patient's condition was an extremely

grave one. There was an anxious and pinched expression, and the pulse was weak and rapid. The patient had occasionally moved about the room, although suffering acute pain. It was thought by all doubtful whether the patient could survive an operation; but the signs of obstruction were so marked that it was decided to operate, and give the patient his only chance of recovery.

Operation. — At 4 P. M., August 8th, an incision was made on the median line, diverging slightly to the left at the umbilicus, about four inches in length directly over the tumor. On opening the abdominal cavity and pushing aside the omentum, this tumor was found to be formed by a twisted coil of intestine, which immediately presented itself. On close examination it was found that a loop of intestine, some nine or ten inches in length, had been twisted on itself, and the loop thus formed was bent over slightly to the left. The whole loop was highly congested, and the bent portion of a deep chocolate color. It required some little force to unfold the bowel, and it was then noticed that the omentum was thickened and rigid. Considerable bloody serum flowed from the peritoneal cavity during the operation. The coil was returned to its natural position, and the wound closed with silk suture. All steps of the operation were made with due antiseptic precautions, and the duration of the operation did not exceed twenty minutes.

The patient was put to bed, and hot-water bottles applied, and brandy and ice ordered. During the evening morphine was given for the relief of pain, which still continued, and the patient slowly sank, and died on the following morning, at six o'clock.

The autopsy, performed by Dr. S. J. Mixter, showed the seat of the twist to be about the beginning of the ilium. The condition of the constricted bowel appeared to be good; but the mesentery was greatly thickened, and had lost its flexibility, and the vessels were thrombosed. There was an incipient peritonitis. The liver was somewhat enlarged. The gall-bladder was distended, containing a dozen or more good-sized gall stones. To the immediate right of the gall bladder was an abscess, containing about two ounces of pus, which did not appear to communicate either with the gall-bladder or the peritoneal cavity. All other organs were normal.

The usual seal seat of volvulus is at the sigmoid flexure and in the lower portion of the ilium. As the twist was situated near the junction of the jejunum and the ilium in this case, it may be regarded as an unusual example of this affection.

Whether the massage of the abdomen which was performed in this case, and was done with somewhat rotary movements, had anything to do with the establishment of a volvulus is quite uncertain. The question may, however, with propriety be raised whether manipulation of the bowels, in a state of unusual sensitiveness caused by deep-seated inflammation, may not be followed by an abormal peristaltic action, which might render a twisting of a loop of intestine possible. The constant moving about of the patient up to the last day of his illness is also a factor which should be taken into account.

Precisely how long twist had existed in this case it is not possible to state with any certainty, owing to the masking of the symptoms by inflammation elsewhere in the abdominal cavity. The condition of the bowel and its mesentery, and the firm clots in the mesenteric vessels, showed that strangulation was so far advanced that a return of the circulation to all parts of the implicated area could be made only with difficulty. It seemed better, however, to trust to nature's efforts than to attempt resection of the bowel.

Some individuals appear to be more susceptible to this accident than others. Kœnig claims even a geographical distribution for it. It has, for instance, been observed with unusual frequency in Russia. The explanation is supposed to be the unusual length of the small intestine, due to a coarse vegetable diet, the length ranging, in cases observed, from twenty to fifty-six feet. The pedicle of the mesentery is in such cases much shorter in comparison to its length and breadth than in the normal. A long mesentery may occur, also, in individuals with a large abdominal cavity, as in old people with relaxed abdominal walls, or women who have borne a large number of children.

REPORT ON PROGRESS IN THERAPEUTICS.[1]

BY FRANCIS H. WILLIAMS, M.D., AND SAMUEL DELANO, M.D.

Passing now to its therapeutic use, von Jaksch,[35] professor at Gratz, in a comparative estimate of various *antipyretics*, gives first place to thallin as the quickest and surest antipyretic, and the one most free from dangers. Von Jaksch recognizes in full the great value of antipyrine, but warns against the intemperate use of a substance which may so easily produce unpleasant consequences. Antipyrine is in no way superior to the others, and he has many times seen bad symptoms follow in its train, as sweating, chills, vomiting, cyanosis, while a destructive action on the blood he considers established. In general, he warns against a misuse of antipyretics, as the reduction of the fever is not always of importance to the patient. Molliere[41] institutes a comparison between a series of typhoid cases treated respectively by antipyrine and the cold bath, the tables showing more or less decidedly in favor of the bath. But nothing could be more untrustworthy than a comparative mortality percentage based on a relatively small number of cases, which Molliere has given us. The bad effects of antipyrine as witnessed by him *are*, however, of practical import, and in his experience they have been common. In one case there was great prostration and jaundice, with subnormal temperature of 96.8°. In another, death with eclampsia, while the autopsy showed but slight change in the kidney. In two cases out of fourteen there was an eruption.

Beyond its antipyretic use, now well established, and in regard to which there is nothing new, hardly a disease or condition, could be named to the relief of which antipyrine has not been applied. The success in so universal an application of the drug is surprising, and the reports of its effects are full of an enthusiasm that seems exaggerated. On nothing, however, do observers so unanimously unite as on its merits as an analgesic. So important have the French believed this use of it that they proposed the substitution of the name analgesine.

[1] Concluded from page 358.
[35] Robin. Bull. Acad. d. Méd. d. Par., 1887, No. 49, p. 701.
[39] Hénoque. Gaz. hebd., January 13, 1888, p. 29.
[34] Wilson. Jour. Nerv. and Ment. Dis., 1888, p. 40, 43.
[35] Von Jaksch. Schmidt's J. B., 1888, II, p. 131; Wien. Méd. Presse, 1888, No. 6, p. 41.
[36] Germain See. Bull. Acad. d. Méd., September 6, 1887.
[37] Sturge. Brit. Med. Jour., 1888, p. 243.
[41] Molliere. Lyon Méd., 1888, p. 280.

(Fränkel makes five grains equal to one-thirtieth of a grain of morphine). First applied to the relief of migraine (of which some mention was made in last year's report) its use has been extended to all painful affections. In migraine and cephalalgia its success has been firmly established as a fact by scores of observers, so that one should certainly try this remedy first of all. In relieving pain it does not produce sleep, but for the relief of pain and to procure sleep as well, antipyrine and chloral make a good combination. Germain Sée [36] prefers antipyrine subcutaneously to morphia, because it does not produce bad after-effects, as vomiting, nor excitement, nor stupor, and may be repeated many times without danger of morphine habit (antipyrine habit?) In many cases it is also *curative*. Germain Sée has used it in various head pains, as rheumatism, gout, neuralgias, biliary and renal colic, angina pectoris, and asthma, and believes it will take the place of morphine. Subcutaneously it is used in fifty per cent. solution, fifteen minims. Hirsch [44] was one of the first to make use of it thus, and had great success in various painful conditions. As a precipitate of antipyrine deposits in the syringe, Hirsch advises washing out with carbolic solution, which indicates when the syringe is clean as its milky combination with antipyrine ceases to be formed. Berdach [45] has also subdued all forms of pain with the subcutaneous injection. Following the injection is a local feeling of tension and a smart burning sensation, continuing a few seconds; the pain should be relieved within five minutes, and the relief lasts six hours. In a few cases indurations follow at the seat of the injection. Jennings has seen ecchymoses; no abscesses are reported. Jennings mentions nausea and vertigo as frequent consequences of its hypodermic use. Wilson [34] finds five to ten grains constantly relieving pain unaccompanied by fever without producing subnormal temperature. Against all these and many other favorable reports must be placed that of Wossidio,[46] who was only successful with subcutaneous use of antipyrine in one neuralgia out of four.

Still more recently there has been published testimony to the *local anæsthetic* effect of antipyrine. Wolff [47] has used it in a very large series of cases, and advises its use in all local superficial pains where a prompt action is wanted. For the effect is obtained within five minutes, and lasts ten or twelve hours. The only drawback has been the burning, which lasts about a minute. (For this a combination with cocaine has lately been suggested). This action adapts it to, and Wolff has used it with the greatest satisfaction in, (1) lumbago and muscular pain (in some cases *curative*); (2) chest pains of phthisis; (3) neuralgias of superficial nerves; (4) for diagnosis (acute chest affections, fractures, etc.); (5) asthmatic attacks; (6) in place of morphia, when that is unadvisable, as in children.

At the time of making the last report antipyrine and antifebrin had had a few trials in acute rheumatism. Evidence has now multiplied, and the weight of it in regard to antipyrine is not in favor of its being a substitute for sodium salicylate, though it is useful. Germain See,[36] in acute rheumatism with fever, gives salicylate; in rheumatism without fever, or with heart complications, antipyrine. Wilson [37] finds it much inferior to the salicylate. Fränkel,[48] in thirty-four cases, observed in all but two, amelioration of symptoms and shortening of the attack, fifteen relapses, and an average duration of twenty-five days, against 35.2 with the salicylate. Johnson reported four cases in all of which the temperature was reduced, but only one of them was relieved. Brooks has used it in a large number of cases, and in many found it successful. It often succeeds where salicylate has failed, and it is a good remedy for chronic cases.

In whooping-cough there seems to have been substantial success. Sonnenberger [49] was the first to report a series of cases numbering seventy. The remedy should be given continuously, and especially distinguishes itself in cases taken at the outset. Of these the average duration was three to five weeks, and the number of paroxysms six or seven a day. Griffith,[50] using it in fifteen cases, declares it shortens the duration and diminishes the paroxysms. His dose was small, not over three grains, and this caused no eruption or bad symptom. Dubousquet-Laborderie [51] had complete cure in eleven out of fifteen cases, in from twelve to sixteen days. (The ordinary duration he estimates at forty to fifty days). The remedy diminishes the number of paroxysms, and reduces the case rapidly to one of catarrh. Dose, five to fifteen grains to child two years old; fifteen to one drachm to older children. He had two deaths, and two cases of erythema.

In chorea the results are not so satisfactory. While Legroux [52] considers it the surest and quickest remedy we have, in six cases of his reducing the usual duration of seventy to ninety days to six to twenty-seven days, in doses of fifteen grains, no one would like to repeat in his own practice the experience of Bokenham.[53] In the first of his cases twenty grains t. i. d., for two weeks, though it had a good effect on the chorea, produced an erythema and malaise. In the second case there was no effect on the chorea, but an increase of urine and much thirst. Here fifteen to twenty-five grains was taken, t. i. d., for three weeks. In the third case there occurred on the third day vertigo, drowsiness, delirium, lasting five hours; difficult respiration and fever, increased amount of urine, and an obstinate diarrhœa, lasting three days; by this time, though, the chorea was cured! Case four was cured in seven days. In case five the first dose caused vertigo and cold extremities. In the sixth case a rash appeared in two days, and the chorea was worse. With the dose reduced the chorea disappeared with the rash. Bousse [54] reports one severe case in a child of eight years, where there was improvement after four doses of eight grains, and a cure in nine days under same dose t. i. d. In another case a complete recovery took place in fourteen days, but after the first dose the clonic movements of the limbs (Schlender Krämpfe) which had been very severe, became less, and talking, before impossible, was again under control. Quite at variance with these observers is Perroud, who does not share their enthusiasm. Out of his four cases, in none was there complete cure, and in only one unmistakable improvement (forty-five grains pro die).

The observations on epilepsy are interesting, as one might expect antipyrine to be of service here from its action on the nervous system. Bokenham,[53] using it

[44] Hirsch. Berl. Klin. Woch., 1887, p. 863.
[45] Berdach. Münch. Med. Wochschft., 1888, No. 12, p. 209.
[46] Wossidio. Berl. Kl. Wchenschft., 1888, No. 19, p. 381.
[47] Wolff. Ther. Mouhfte, 1888, p. 279.
[48] Fränkel. Deut. Med. Wchnschft., 1887, No. 41.
[49] Sonnenberger. Lyon Méd., 1888, Feb. 12, p. 262.
[50] Griffith. Ther. Gaz., 1888, p. 84.
[51] Dubousquet-Laborderie. Bull. Thér., 1888, May, p. 385.
[52] Legroux. Deut. Med. Wchnschft., 1888, Feb. 23, p. 158.
[53] Bokenham. Practitioner, 1888, p. 266, ib. p. 99.
[54] Bousse. Le France Méd., 1888, Feb. 2, p. 157.

in twenty inveterate cases, found it prevented the seizures in eleven, failed in four, and improved the condition in five. Robin,[58] on the contrary, does not find it influential over the attacks, but adapted to diminish the secondary mental disturbance, headache, and neuralgias.

Dupuy [55] extolled antipyrine as a sovereign remedy for sea-sickness, maintaining that fifteen grains, t. i. d., three days before sailing, and continued two days after, gave the best of results in eleven cases, and that, too, in patients who previously had always had a sad experience. His observations were confirmed by Ossian-Bonnet, who found the drug absolutely reliable. Quite the opposite was the experience furnished by (as Rollet [56] relates) one hundred and twenty French medical men on their way to attend a congress at Oran. The voyage occupied forty-one hours, and almost all were sick, though antipyrine had been freely taken by all, according to agreement. There was the same result on the return.

According to Hénoque,[59] antipyrine is a remarkable hæmostatic. It may be applied in powder, or solution, or ointment. In epistaxis the powder may be insufflated, or a solution of one to five used. For a bleeding surface, an irrigation of one to twenty is sufficient. For cases of cancer where there is both sloughing and bleeding, antipyrine seems to possess a happy combination of qualities (antiseptic and hæmostatic).

In labor, the claims made for it seem to be worth testing. Thus Steinthal,[57] in a primipara in whom the *os* had been slowly and painfully dilating for twenty hours, gave thirty grains by enema. Pain ceased for an hour, but the dilatation and action of the uterus proceeded. Gerard [58] saw a five months' fœtus born without pain after two enemas of thirty grains each.

ANTIFEBRIN.

Very few special articles have been devoted to antifebrin. Guttman [59] praises it very highly in rheumatism. He has used it in fifty-two cases of acute, twenty-nine of chronic, and one hundred and sixty-seven of rheumatism in general — certainly quite enough to furnish important conclusions. He has found it wonderfully prompt and sure, but our faith may well be shaken by other statements; namely, that the duration of the longest case (in which *all* the joints were successively affected) was only seven days; that there was not a single heart affection in fifty-two cases, and only one relapse! The dose was twelve to fifteen grains, t. i. d., and there was not a single bad symptom, except sweating.

In epilepsy, Borosnyoi [60] compared antifebrin in nine cases with bromide, and with no medicine at all. Bromide is much superior; antifebrin in general does not diminish the attacks, and in cases where increased doses seem to have some good influence it is not advisable to continue it, as Borosnyoi in *all cases has observed cyanosis.* Germain Sée [61] finds antifebrin better than antipyrine in the pains of tabes, or where there is compression of the cord, or in neuritis; but in some patients with tabes antifebrin has caused marked and alarming cyanosis.

[55] Dupuy. Deut. Med. Wchnschft., Feb. 23, 1888, p. 158.
[56] Rollet. Lyon Méd., April 29, 1888, p. 695.
[57] Steinthal. Deut. Med. Wchnschft., 1888, No. 9.
[58] Gerard Rev. méd. d. l. Suisse Rom., 1887, 11, p. 642.
[59] Guttman. Berl. kl. Wchnschft., 1887, No. 24, p. 943.
[60] Borosnyoi. Ctbl. f. gamt. Ther., March, 1888, p. 47.
[61] Germain Sée. Ctbl. f. kl. M., March, 1888, p. 213.

PHENACETIN.

Though this substance was discovered only as late as February, 1887, by Kast and Hinsberg,[62] yet it is being rapidly tested, and has won much favor as an antipyretic and analgesic. It is the acetyl compound of phenetidin, or the ethyl ether of paramido-phenol. It crystallizes in a form much like antipyrine, and has no taste, color, or odor. It is practically insoluble in hot or cold water, relatively soluble in alcohol (one to thirty), and quite soluble in ether. To use it, an alcoholic solution would make the quantity of alcohol too large, especially for children, so that it is best given in powder, in which form, owing to its absolute tastelessness, it is not disagreeable. An average dose is about seven grains. All observers agree that gr. xv = gr. xxx of antipyrine = gr. vii of antifebrin. Its antipyretic action commences in from one-half to one and one-half hours, according to different observers, reaches the maximum in from two to four hours, and lasts from four to seven hours. This seems a pretty prompt effect, considering its insolubility, but a fact ascertained by Misrachi and Rifat [63] is looked upon by these observers as explaining it. Phenacetin is insoluble in lactic acid *in the cold*, but heat the mixture slightly, and twenty parts become soluble in one.

Given to animals, it is well tolerated. That so large quantities are well borne lead Misrachi and Rifat [63] to conclude that it is not toxic, or much less so than antipyrine and antifebrin. Hinsberg and Kast,[62] by large doses, induced symptoms of poisoning, consisting of rapid respiration, vomiting, staggering gait, cyanosis, and methæmoglobin was demonstrated in the blood, but these animals recovered. Given to healthy persons, it has produced but little effect. (According to Hoppe and Kobler, some hypnotic effect, with now and then some sweating).

As an antipyretic, it seems to be absolutely sure, reducing temperature as well as antipyrine, but without its bad effects. Von Jaksch [64] records that in one case of a child, one-half to three grains caused profuse sweating, with intense cyanosis and collapse, but others have had no such experience in a large number of cases. Hoppe [65] once saw an exanthema, as from antipyrine; so, also, Valentin.[71] No observer, with the exception of von Jaksch,[64] has seen the collapse, cyanosis, and vomiting so often associated with the antipyretic action of antipyrine and antifebrin. Some have not even observed sweating to accompany it. It usually produces a sense of comfort, and patients are apt to sleep after it. The duration of the afebrile state seems to be rather shorter than with antipyrine, though, according to Roe, it is longer. To keep up an afebrile state, Misrachi and Rifat [63] have found that, at least for phthisical cases, six grains must be given every three hours.

The first doses act with more effect than the later ones, but its continued use, even in children, has not been attended with bad results. Kast and Hinsberg [62] have shown that it is best given when the temperature is rising, and in one large dose.

[62] Kast and Hinsberg. Ctbl. f. med. Wiss., 1887, No. 9.
[63] Rifat. Bull. Thérap., June 15, 1888, p. 481.
[64] Von Jaksch. Wein. med. Presse, 1888, No. 6, p. 41.
[65] Hoppe. Ther. Mouhefte, April, 1888, p. 160.
[66] Heusner. Ther. Mouhefte, March, 1888, p. 103.
[67] Müller. Berl. Klin. Wchnschft., July 23, 1888, p. 613; and Münch. Med. Woch., July 10, 1888, p. 474.
[68] Röhden. Deut. Med. Wchnschft., May 3, 1888, p. 366.
[69] Lepine. La Semaine Méd., December, 1887.
[70] Kobler. Wien. Med. Woch., 1887, Nos. 26 and 27.
[71] Valentin. Ther. Mouhefte, July, 1888, p. 330.

Quite as unanimous are the different observers in praise of its analgesic qualities. They agree that it is superior to antipyrine, because no bad effects attend it. For this purpose somewhat larger doses are necessary, and its effect is not to be expected before one to two hours. Hoppe [65] and Heusner [66] recommend especially its trial in migraine and neuralgias. Hoppe treated twenty-five cases, giving seven to fifteen grains with good success. On the contrary, Misrachi and Rifat [68] find it inferior to antipyrine in migraine, calling attention to the following fact, which must be often of some importance; namely, that in case of vomiting, so often associated with headache, phenacetin, on account of its insolubility, could not be administered by the rectum. These observers, though, used it in forty-five cases of severe neuralgias and muscular pain, with perfect success in eighty per cent., partial in five per cent., and failure in fifteen per cent. The results seemed especially favorable in long-standing, obstinate cases; as, for example, a lumbago of three years' standing, and similar cases. In many the continued use produced a cure. In five cases of pneumonia, besides reducing the temperature, it lessened in a marked degree the pain in the side and dyspnœa. Müller [67] finds thirty grains to one drachm necessary for the relief of pain. Misrachi and Rifat [68] believe it to have some local anæsthetic action, as tested by holding the hand in an ethereal solution. (The same property has been claimed for antipyrine.) In one case of incurable cancer of the tongue, where the pain was most intense, it had a remarkable effect of this kind used as a powder.

Röhden [68] calls it a specific in acute poly-arthritis rheumatica. In a large number of patients he has used only phenacetin, and declares that it acts quicker and better than salicylic acid or antifebrin. Forty-five grains *pro die* kept the fever down, and rapidly moderated the pain and swelling. Müller [67] also finds it a remedy admirably suited for the onset of this disease.

Misrachi and Rifat [68] find it especially well adapted to chronic gastric troubles attended by pain, because it is non-irritating. Antipyrine has often failed them because of its opposite effect, even when associated with sod. bicarb., as recommended. They indorse it, too, in the suffocative attacks induced by any form of laryngitis in children, as well as in whooping-cough. Lepine [69] recommends it in the pains of tabes. Like antipyrine, it is antiseptic, but bacteriological investigations by Kobler [70] have not been satisfactory, on account of its insolubility. Röhden [68] recommends it highly as an antiseptic powder, forming, with the secretion, a crust, under which healing takes place.

Thus far, then, only good reports have been given of phenacetin, and while it is well not to be too enthusiastic (for, as Misrachi and Rifat say, we are just beginning to find out that *antipyrine* has its drawbacks), it seems likely to prove an addition to our resources.

ICHTHYOL.

This substance has been a remedy of the past year, and some review of its uses may be profitable. It occurs in two forms, in compound with ammonia as a sulfonate of ammonia and with sodium as a sulfonate of sodium. The first has been most used and is of a brown color and syrupy consistency; the soda compound is more like tar. Both salts are soluble in water. Lorenz [72] found experimentally that it was a strong antiseptic, and clinically it so proved itself. In burns, especially of the first degree, it is very efficient either with vaseline or in a two to ten per cent. solution. Lorenz first recommended it in erysipelas where he saw the most satisfactory results. Ichthyol, ether and glycerine are used in equal parts, the blush being painted three or four times a day and wool or cotton applied, (for the most part after twice painting the redness disappears, and the skin wrinkles), or a collodion may be formed of ichthyol one part, ether one part, and collodion fifteen parts.[73] In strong enough solution it is an irritant to the skin, but in weaker strength softens the epithelium and causes proliferation of the cells of the rete. Zeisler, and after him Unna, recommended highly its use in many skin diseases such as eczema, sycosis, acne rosacea, herpes, etc. Lartigan [74] secured good results in all skin affections in which the epithelium is intact. On the other hand, Jackson [75] has been very much disappointed in its use, it not having shown itself so good in his twenty-two selected cases as many other older remedies.

In skin diseases it should also be given internally. When taken in doses of four to seven grains, the urine diminishes in amount, and turns a violet color. The urea is less, and other important chemical changes are to be noted. Zuelzer [76] was a very enthusiastic advocate of its use internally, to promote nutrition in chronic wasting diseases; as, for example, chronic nephritis and diabetes. Following him, a favorable influence over many conditions has been attributed to it, but especially over chronic hyperæmias of pharynx and larynx. Asthma, disturbances of digestion, pelvic neuralgias, sciatica, chronic rheumatic and gouty conditions. It was left for Nussbaum [77] to discover (?) the link which bound these varied affections to the remedy in a true therapeutic relation; this he finds in the physiological action of ichthyol in constricting dilated bloodvessels. In his experience all the affections which ichthyol benefits are associated with, or dependent upon, a condition of vascular dilatation or "anomalies of the circulation." Nussbaum has neither proven this to be a true physiological action of the remedy, nor, what would be attended with great difficulties, shown that his pelvic neuralgias, digestive disturbances, etc., are dependent upon an increased vascularity, and the explanation has very much the look of a theory to harmonize a mass of heterogeneous clinical observations.

The two very latest contributions to the question are those of Lorenz [78] and Meyer,[79] and their conclusions are almost diametrically opposed. Lorenz, like Zuelzer, extols ichthyol with well-nigh unbounded enthusiasm for its superb influences on the general condition; maintains that it increases the weight, improves the appetite, general feelings and appearance of the patient, and recommends it in *all* conditions of debility. In his hands the remedy has never caused disturbances. The eructations tasting nastily of the medicine (a result noted by many observers), disappeared in a few days. In chronic rheumatism and chronic nephritis, the results have been of the best.

Meyer,[79] on the other hand, finds it free from bad consequences in only two out of sixteen patients,

[72] Lorenz. Allg. Med. Ct. Ztg., 1887, No. 40.

[73] Amer. J. Pharm., Aug., 1888.
[74] Lartigan. Prog. Med., 1887, No.
[75] Jackson. J. Genit-ur and Cut. Dis., June and July, 1887.
[76] Zuelzer. Monhft. f. pr. Derm., 1886, Bd. v, No. 12.
[77] Nussbaum. Ther. Monhfte., Jan., 1888.
[78] Lorenz. Berl. Kl. Wchnschft, July 16, 1888, p. 587.
[79] Meyer. Ibid., p. 588.

among the effects being sickness, vomiting, burning in throat, feeling of fatigue, and in many the nasty aftertaste. No improvement in the general condition was noticeable, though all of the sixteen took the remedy continuously for three weeks. In regard to the rheumatism which the patients had in a severe and very chronic form, the results were thoroughly unsatisfactory and discouraging; with the exception of his first case in which the success was marvellous, Meyer could see no effect whatever from the remedy. Indeed, two patients said they were worse.

As to the dose, Nussbaum[77] gives one and two-thirds grains t. i. d., increasing to ten or twelve t. i. d.

THE IODOFORM QUESTION.

Ever since the Danish experimenters, Heyn and Rovsing[82] published their sweeping denunciation of iodoform as an antiseptic, observer after observer has come forward with his contribution to the merits of the case. Freyer has put all these together to determine the present status of the question, and abstracts of the various papers, with the references, may be found by consulting his article.[80] A similar résumé is given by von Kahlden.[81] In general, the results obtained have been such as to confirm the statements of Heyn and Rovsing. In the main, the experiments, whether in artificial culture or on animals, showed that iodoform has no direct antibacteriological action on the different microörganisms in general. Only three observers seem to prove the opposite, and Freyer calls their conclusions strongly into question; for example, Sattler declared that a silk thread covered with a fine layer of iodoform showed only a limited development of bacteria, but Freyer wonders if the iodoform did not form a mechanical protection. In regard to Sänger's conclusions that iodoform hinders the development of the bacillus of anthrax. Freyer declares them flatly contradicted by his own experiments as well as many others, and finds in the prevention of contact an explanation for the failure of the culture to inoculate on a wounded surface.

In any case, Freyer goes on to say, the many positive experiments according to which pathogenic bacteria still continue active and capable of developing, though intimately mixed with iodoform, force us to the conclusion that in general, iodoform is no antiseptic or parisiticide, in the sense of a disinfecting agent, even though on single bacteria, as, for example, the cholera bacillus it acts destructively, and in the case of others hinders growth. Of the application of iodoform to wounds and suppurating surfaces, it may be said that it hinders the free formation of pus in spite of the fact that it is not directly destructive to the cocci of suppuration; but it is to be noted that no surgeon relies upon the direct antiseptic action of iodoform, no matter how enthusiastic he may be in advocating its use; in other words, no surgeon pins his faith to the use of iodoform alone but first conducts an *antiseptic* operation and then makes the wound *aseptic before using iodoform.* Even Mikulicz himself, the warmest defender of iodoform, rinses his iodoform guage in carbolic before applying. The local anæsthetic effect of iodoform should not be forgotten, but its great value to the surgeon lies in its power to diminish secretion, and that for a long period.

This, various observers, but especially de Ruyter,[83] believe to be connected with the action of free iodine on the ptomaines generated by the bacteria. De Ruyter found that when pus and iodoform were mixed and allowed to stand, after three days iodine compounds were present, and second, that the ptomaine cadaverin formed an inert compound with iodoform. To draw from this a general conclusion upon the action of iodoform in wounds, however, is unjustifiable, because, even supposing that ptomaines played so important a *rôle* in surgical infection, hitherto all attempts to demonstrate ptomaines in connection with the commonest and most feared bacilli (suppuration, erysipelas, etc.), have failed; nor would it help the position of iodoform at all because the possession of a positive action on *ptomaines* (formed *secondarily* to bacteria), would not save it from condemnation as a surgical *antiseptic;* namely, a substance capable of disinfecting wounds and of hindering general infection by destroying the bacteria (Rovsing). It *would* explain, however, as Rovsing[84] points out, the favorable action of iodoform in regions where decomposition and the formation of stinking ptomaines is unavoidable; namely, in the rectum, mouth, nose, and in part in the vagina. Yet even here the want of *antiparasitic* power is often displayed, adds Rovsing, for he has repeatedly seen cases of extirpation of the lower jaw or of the uterus per vaginam, *die of septicæmia, even when the use of iodoform kept the wounds sweet and fresh in appearance.* Neisser,[85] who is the last to investigate the question, declares that no simple picture of the processes going on in wounds can be formed; in general, he finds iodoform *first* antiparasitic after certain reducing processes, whether on the part of the tissues or of the bacteria themselves, have liberated free iodine or hydriodic acid, *which alone are of antibacteriological significance.*

SUBSTITUTES FOR IODOFORM.

(*a*) *Bituminated Iodoform.* — This originated with Ehrman, assistant in the clinic for syphilis, Vienna, who furnishes a description and report of its use in the *Centralbl. f. gesamte Therap.*, July, 1888, p. 385. After much experimenting he succeeded in combining tar with iodoform and forming this substance, which, under the microscope, shows no longer the characteristic iodoform crystals, but only hyaline plates. The iodoform odor cannot be distinguished though it is brought out by a large quantity of water; on this account there might be some odor in wounds with abundant secretion. The peculiar odor is that of tar, which may be covered by styrax. Ehrman gives the results in twenty-two cases of chancroids and buboes, iodoform being alternated for purposes of comparison; the results were uniformly good, some cases doing well under the new preparation, where the iodoform failed. Ehrman, places three points of superiority to its credit, (1) absence of disagreeable odor, (2) absence of the eczema and erythema which iodoform often causes, (3) a uniformity of action on granulating surfaces, which iodoform often seems to lack.

(*b*) *Sozoiodol.* — This compound was introduced by Lassar (*Ther. Monatshefte*, 1887, p. 439). It is a white powder, showing under the microscope flakey leaf-like crystals, containing iodoform (42%) phenol and sulphur, easibly soluble in water and alcohol, and very stable

[80] Therap. Mouhfte., June, 1888, p. 287; July, p. 334.
[81] Centbl. f. Bakteriolog., 1887, pp. 165 and 194.
[82] Heyn and Rovsing. Fortschrifte d. Med., June 15, 1887.
[83] De Ruyter. Schmidt's, J. B., 1888, No. iv, p. 19.
[84] Rovsing. Fort. d. Med., August 1, 1888, p. 569.
[85] Neisser. Virch. Archiv., Bd. 110, hft. 2, 3.

in mixtures. It is borne well in powder and ointment by the healthy skin, and is soothing to an inflamed and irritable integument. Lassar used it in five to ten per cent. powder and paste with the zinc oxide, — amyl, vaseline base of his paste, or with lanolin. He had good results with it in acute and chronic eczemas, — herpes, impetigo, inflamed skin and mycotic diseases. In varicose ulcers he prefers it to salicylic acid. Fritsche (*Ther. Monatshefte*, 1888, June, p. 283), has used it in diseases of the nose and larynx with the greatest satisfaction. There are, in all, four combinations of the substance with bases; namely, with sodium, potass, zinc, and mercury. The first two, of a bitter, soapy taste and smelling of lye; if applied to the nasal mucous membrane pure, cause only a moderately strong burning, and an increased secretion of mucus. The zinc ointment must be reduced to one-fifth to one-tenth, and the mercury salt, which is very irritating, to one-tenth to one-twentieth. All were used as powders only. In atrophic catarrhs, ozæna and pharyngitis sicca. Fritsche had much better results than with other applications. The secretion was increased, the swelling of mucous membrane, where present, diminished. Operative wounds in the throat and nose healed much more quickly than usual. All of the thirteen cases of tubercular ulceration showed tendency to cicatrize, but at the time of writing no ulcer had completely closed.

SACCHARIN.

This substance, now in use since 1879, when it was discovered by Remsen and Falelberg, has been the subject of much discussion of late because of the extensive use being made of it in manufactures. In France, especially, advantage has been taken of its cheapness and its being free of import to use it in great quantities under the name of *sucre de cologne*, in place of cane sugar, in the making of syrups, liquors and confections; while in Germany beer and cocoa have been thus adulterated. Its degree of sweetness is 280 times that of sugar. So important did the question become that finally measures have been adopted in both England and France restricting its use to purely medicinal purposes.[86] In medicine its chief uses have been in diabetes, and as a corrigent, and it has been looked upon as harmless; but several observers have recently came forward to point out its bad effects. Worms[87] especially emphasizes the necessity of a more exact knowledge of the physiological action of saccharin. Given to five diabetics in the dose of half a grain, t. i. d., in three of the cases it could not be borne longer than eight or ten days, but then caused nausea, severe gastric pains, and a persistent sweet taste in the mouth. So far as known it is not toxic, and it is said that the whole amount taken is eliminated in the urine unchanged. Perhaps the digestive disturbances may have been owing to impurities, as other observers have found it well tolerated; or the explanation may be found in the fact recently observed by Paul, that saccharin (solution 1–500) retards in an appreciable manner the digestive action of the gastric and pancreatic fluids. Paul[88] has also shown that it has marked antiseptic properties. A solution 1–700 prevents development of the straphylococcus pyog. aur.; it also destroys all the microbes developed in saliva, a solution 1–200 prevents ammoniacal change in the urine. Consequently Paul recommends its employment in fluids used for lavage of stomach and bladder. Mosso had previously noticed the fact that the urine of animals taking it kept longer, and Little[89] has reported a series of cases where urine ammoniacal from chronic cystitis has become sweet and acid under its effect. In one case of multiple calculi the urine which had been intolerably putrid for three months, became normal in three or four days and continued so.

[86] B. M. & S. J., 1888, Vol. 99, p. 187.
[87] Worms. La. Kib. ried. May 13, 1888, p. 234.
[88] Paul. C. Rev. u. d. l'Acad. d. Med. July, 13, 1888, p. 443; Gaz. Hebd., 1888.

[89] Little. Dub. J. Med. Sc., June, 1888, p. 439.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.

COUNCILLORS' MEETING.

A STATED meeting of the Councillors was held at the Medical Library, Boston, on Wednesday, October 3, 1888.

The President, DR. D. W. CHEEVER, called the meeting to order at 11 A. M. Seventy-seven Councillors were present.

Delegates to other medical societies were appointed:

Vermont Medical Society: Drs. F. H. Brown, of Boston; F. H. Thompson, of Fitchburg.

New York State Medical Association: Drs. E. B. Harvey, of Westboro'; J. F. A. Adams, of Pittsfield.

Medical Society of the State of New York: Drs. W. Ingalls, of Boston; F. W. Chapin, of Springfield.

In accordance with the recommendation of the Committee on Membership, one Fellow was allowed to resign, and eight Fellows were placed on the retired list.

On recommendation of the Committee on Publications, the following votes were passed:

That the Councillors hold their annual meeting on the first day (Tuesday) of the annual session of the Society, at 11 o'clock A. M., instead of at 7 P. M., as has been the custom in recent years.

That the Committee of Arrangements be instructed to provide a place for the delivery of the Shattuck Lecture on the evening of the above-named day.

The committee announced that they had selected Dr. George B. Shattuck, of Boston, to deliver the Shattuck Lecture at the meeting of the Society in 1889, and that he had accepted the appointment.

The Committee on Medical Diplomas reported the names of several colleges, recommending that they be added to the list of those whose diplomas are recognized for the purpose of admission to the Society. The recommendation was adopted.

Dr Walcott offered the following, which was adopted:

That in the opinion of the Councillors of the Massachusetts Medical Society the present epidemic of yellow fever in several States of this Union has again made evident the imperative need of some organization on the part of the general government for the protection of the public health; an organization that shall be independent of existing bureaus, and solely devoted to this most necessary function of any form of government.

That this resolution be sent to the President of the United States, to members of Congress, and to the Boards of Health of the several States.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

CHARLES HARRINGTON, M.D., ACTING SECRETARY.

Regular meeting, Monday, May 28, the president, Dr. Wadsworth, in the chair.

Dr. J. C. Warren showed a patient from whom the superior maxilla had been extirpated for sarcoma of the antrum, and gave the following account of the case:

The patient was forty-one years of age. About four years before his entrance into the hospital he began to have difficulty in breathing through the left nostril, with occasional epistaxis. Three years ago polypi were removed by Dr. Knight, but with slight relief to the obstruction, which has continued since with occasional discharge of bloody fluid from the nostril. About eight months ago, a bulging in the roof of the mouth was noticed, which gradually increased.

The finger introduced into the naso-pharynx detached a growth protruding from the left nostril, and occupying the vault of the pharynx. This growth was not observed in an examination made a few months earlier, showing that the tumor had grown from the maxilla, and was not a naso-pharyngeal polyp.

The incision through the integuments was that which follows the lower edge of orbit, side of nose and median line of upper lip. The growth was found to have absorbed the greater portion of the maxilla. A few nasal polypi were removed also.

The hæmorrhage was easily controlled. On stitching back the cheek a few sutures were taken to unite the mucous membrane of the cheek to the soft palate, and thus diminish somewhat the opening left in the roof of the mouth. The cavity was packed with iodoform gauze, and the surface of the wound in the mouth was painted with "antiseptic varnish," (equal parts of compound tincture of benzoin and an etherial solution of iodoform), which covered the wounded surfaces with a coating not easily removed. The external line of incision was painted with iodoform collodion, no other dressing being applied.

Convalescence was uninterrupted, the temperature not rising above 99°.

As you see, the external scar is now scarcely perceptible, and the falling in of the cheek is prevented by a plate with an air space, supported in part by a gold spring attached to two false teeth in the lower jaw.

Articulation, as you hear, is perfect. A careful examination of the interior of the pharynx, made recently by Dr. Langmaid, showed that there was no sign of a return of the disease. Dr. W. F. Whitney's microscopical report showed the tumor to be a round-cell sarcoma.

Dr. E. H. Bradford reported a case of laparotomy for purulent peritonitis. He said:

The case is interesting simply for the result after laparotomy for probable tubercular peritonitis in a child. The child was brought to the hospital with an enlarged abdomen. It was aspirated upon the side, and found to contain pus. The abdomen was then opened, and two quarts of thick fluid removed. This differs from most cases of laparotomy for tubercular peritonitis, in that it was not simply serum with clots of tuberculous matter, but it was thick pus, as thick as in any abscess. It was just pointing at a point near the umbilicus, and it was opened at that spot. A drainage-tube was inserted, which ran down to the true pelvis, and the cavity washed with 1–10,000 corrosive and hot water, and the wound pulled apart in order to see what the contents of the peritoneum were. After the fluid had been removed the liver sank, and you could see the surface of the liver in the wound. It seemed to be dotted with tubercles, as well as one could tell. A portion of the peritoneal sac was removed and sent to the Medical School for examination, but no tubercles were found, so that it seems to be a question as to what the diagnosis is. The rest of the history presents nothing peculiar except this, that at the end of two dressings — five days I think it was — the contents ceased to be purulent, and there was a serous discharge from the bottom of the cavity. The cavity not draining perfectly, it was dressed, I think, every day for a while, and at the present time there is a small cavity about an inch deep which still secretes serous fluid, The drainage-tube was removed at the end of a fortnight, I think, and the wound allowed to heal up, but the temperature rose, and it was found that there was still a certain amount of the cavity which had not filled up. Consequently the drainage-tube was re-inserted, and the patient now carries a small drainage-tube, there being a small cavity. The operation excited no shock to speak of, as will be seen by the temperature chart, and she was up and walking at the end of a fortnight.

I operated upon a second case a few days ago, where there was very little fluid. The intestines were adherent, and tubercles were found. This also shows the safety of laparotomy in these cases, for there was no shock. In fact, this child, the day after the operation, wanted to get up and walk around. The evacuation of the pus seemed to give relief.

Dr. Maurice Richardson: Did I understand Dr. Bradford to state that this pus was in the general peritoneal cavity, and not shut off at all?

Dr. Bradford: It was not shut off at all. I could put my hand above the liver and down into the pelvis, and the intestines were all pushed back upon the spinal column, so as to be flattened out, and they did not seem to be adherent. In fact, it was not an encysted peritonitis at all. I could put my hand around anywhere. I made an incision so that I could get in pretty nearly my whole hand. What the pathology of the case is I don't know. I expect Dr. Rotch to be here. It was his case first, and afterward it came under Dr. Morrill's care, and it was at his suggestion that I made the laparotomy. The child was in a shocking condition before the operation, and she is fattening up now.

Dr. Homans: It is an interesting question in these cases whether a careful toilet of the peritoneum should be made or not, it having been suggested that careful sponging in between the coils of intestines might tend to produce a slight inflammation, perhaps a slight general peritonitis, which, the theory is, would tend to cause an absorption of the tubercular deposits, thus aiding the cure. The question would be, in a case of this sort, whether a child in such poor condition could stand such an operation; but it seems to me certainly advisable in such cases to make a very careful toilet in the hope that it might tend towards the absorption of the morbid products.

Dr. Bradford: Dr. Rotch saw the case before the operation, and perhaps would say something about the diagnosis.

Dr. Rotch: The case was exceedingly interesting,

and I should say a rare one. The child had, besides a very much distended abdomen, almost complete flatness on the left side of the chest, excepting that there was a small portion of the upper left front, which was resonant. It also had some flatness in the right front, beginning at the third rib. Above that it was resonant, but there was also a certain amount of flatness in the lower part of the right back, and a few râles in the right axillary region. I supposed that the pressure of the fluid in the abdomen, by pressing on the lungs, was partly causing the increased area of flatness, but I always suspected that there was something more; that there was an infusion in the left chest at least; and that the absolute dulness in the right chest was caused by pressure from the liver, the fine râles being of an œdematous character. I thought there was a possibility of there being a left-sided empyema with perforation of the diaphragm. That should be thought of. I unfortunately was not able to examine the child after the operation until to-day, as it has been covered with antiseptic dressings. The impulse of the heart was displaced and raised. I supposed that the impulse displacement was from pressure. To-day I find a certain amount of dulness, not amounting to the flatness which existed at the time that Dr. Bradford performed the operation upon the abdomen, but dulness in the lower two-thirds of the left axillary region and in the lower two-thirds of the left back. The impulse of the heart is not so far to the left as it was before, but there is a certain amount of dulness over the lower two-thirds of the sternum, which I should account for by the physiological hypertrophy of the heart at that age. The child is at an age when you frequently find dulness over the lower two-thirds of the sternum which you do not find in younger children, or after the twelfth or fourteenth year. It seems to me that there are adhesions in the left side of the chest, and that the thoracic part of the case is of some importance, and has not been fully explained. It is known that in children especially, when there are these large abdominal effusions, we do get a great deal of dulness, amounting to flatness, in the chest, apparently from pressure, that passes away. But this has not passed away; there is a certain amount left there. I am not fully prepared to say whether there was an empyema in this case, because I cannot explain the signs in the right side unless there was something also on that side. We now find a return of respiration and fremitus, but only to a certain degree. They are very much such signs as you get in the adult chest with very thick adhesions. But on the right side, where you would expect the lung to expand, I still get signs of dulness and diminished vocal resonance and fremitus, so that I think it is a very complicated case. There were some little white pin-head points on the liver. We did not find any of the shot-like feeling that was found in the case that Dr. Cabot operated upon. I mention these thoracic signs merely because I think you have to take them into consideration in the case, as indicating a possible empyema with perforation.

DR. BRADFORD: There seemed to be some induration in the region of the cæcum, but the history was not that of perityphlitis.

DR. ROTCH: The child had pertussis and measles about four months before being seen by me. The abdomen was noticeably enlarged only one week before she entered the Hospital, and about ten days before she was operated upon.

DR. FRANKLIN B. STEPHENSON presented a patient with

PUERILE GENITALIA.[1]

DR. MAURICE RICHARDSON, in presenting

A NEW FORM FOR DRESSING IN CASES OF EMPYEMA,

said: It has been for a long time a very desirable thing to get a tube in empyemas which will have a valve action. At least, I have considered it so, and I have tried to get for the dressings in the permanent incision in empyema a tube which will allow drainage of the chest and prevent air going back again, so that when the lung has been gradually expanded it will be held out. Dr. Cabot's original dressing consists of some gauze and a layer of mackintosh, making a valve action. In a prolonged case that I had I got up a valve more complicated, consisting of the double tube, such as Dr. Cabot uses, with a guard of rubber, such as the dentists use for a rubber dam. Next to that I use borated cotton of sufficient thickness, and a piece of the rubber sheet on the outside of that. There is absolutely no impediment to the evacuation of the contents of the chest. In the cases in which I have used this the lung has expanded very well.

DR. J. C. WARREN read a paper entitled

A CASE OF VOLVULUS.[2]

DR. RICHARDSON: I saw this case at the time of operation, and the most remarkable thing about it, as I remember it, was that the strangulated bit of intestine could be felt very distinctly through the abdominal wall. I never before had any idea that that condition produces a distinct tumor, as it did in that case.

DR. FITZ: I have very little to add in regard to the case. It represents one of the rarest forms of obstruction, and, in regard to its seat, one of the rarest places for the twist to occur. At the same time, it illustrates in certain respects the difference in the condition of the abdomen which exists when the twist is high up. It was conspicuous in this case that the abdomen was not considerably distended. There were not many intestinal coils, and obstinate, continued vomiting was not a conspicuous symptom. These conditions have been considered of importance in discriminating between the twist high up and that low down, the twist low down giving extreme distension of the abdomen and very persistent nausea and vomiting. Although the operation in this case, as well as in many other cases, terminated fatally, at the same time, the discovery of any such a lesion as this at the post-mortem examination is always suggestive that an operation might have prevented death, if in time. In most of these cases the peritonitis is so far advanced, and the prostration of the patient is so extreme at the time of the operation, that only a few hours of life remain afterward; but in this patient that Dr. Warren operated upon the time of the occurrence of the twist did not appear evident from the symptoms.

DR. HOMANS: In regard to the massage as having had any effect in the causation of the twist, it may not be uninteresting to say that in cases of ovarian tumor with twisted pedicle there is not infrequently a history given of patients having been in the habit of rubbing the abdomen to relieve the pain and make it feel easier, so that possibly the massage might have had something to do with it.

[1] To be published later in this Journal.
[2] See page 380 of the Journal.

Dr. Cutler: I would like to ask Dr. Warren how far the thrombi reached that were found at the post-mortem examination; whether they went beyond the mesentery.

Dr. Warren: The autopsy was performed hastily, Dr. Fitz not being present, and that point was not accurately determined.

Dr. Cutler: Of course, if it were high up, the question of resection would not come in. I would like to ask, also, if the pedicle was long or the mesentery unusually long.

Dr. Warren: I should say that there was no especial abnormality in that regard. In this case the bowel was in precisely the condition of bowel in strangulated hernia. It was pushed up, apparently, against the abdominal wall and crowded over, and that peculiar kink which it had was somewhat hard to free. It had to be snapped out straight before it was untwisted.

I would like to mention a case that I saw yesterday, a fibrous tumor of the uterus, which was a case that I had seen some months before. It had come to the Hospital for diagnosis, and the diagnosis had been made of fibroma of the uterus, with ascites. As in some cases, there was a leak through the umbilicus, and a small tumor filled with fluid was present at the first examination. There was no hernial or omental protrusion, because the fluid occupied the abdominal cavity and pressed back the contents. Lately, the patient was tapped at the Hospital for purposes of diagnosis, but no operation was performed. She had been tapped twice since her removal from the Hospital by Dr. Bush, whose patient she was. Yesterday morning, according to his statement, she had an attack of indigestion from some fish or something which she had eaten for breakfast. Vomiting continued, with great pain in the region of the umbilicus, and Dr. Bush was sent for, and found a strangulated umbilical hernia. I saw the case with him in the afternoon, and we made attempts at reduction by taxis, but these were rendered futile by the very large amount of fluid in the sac, which prevented us from getting at the intestine, although it could be felt at certain points by pressure. The sac was laid open, and a considerable quantity of dark intestine was found protruding from a hole which would admit about the two fingers. The strangulation was relieved in the usual way, the intestine returned, and the wall sewed up with deep sutures, and the incision wound was sewed up with superficial sutures. The patient was in a comfortable condition to-day. I mention the case as a complication which occasionally, I believe, is known to occur as the result of ascites.

Recent Literature.

Hygiene for Base-Ball Players. By A. H. P. Leuf, M.D., Director of Physical Education at the University of Pennsylvania and at Swarthmore College. Octavo. pp. 131. Philadelphia: A. J. Reach & Co. 1888.

The importance of the "National Game" as a factor in the life and amusements of the people of the United States is illustrated by the appearance of a number of pamphlets upon the subject, and especially by the fact that it has been considered worth while to publish a book like the "Hygiene for Ball-Players," treating the subject from a somewhat scientific standpoint.

The ideas presented are not strikingly new to the ball-player, but their collection and arrangement in some sort of order is done here for the first time. Throwing, and especially pitching, being the muscular acts of the greatest individual importance in playing base-ball, it is to them that a large amount of space is devoted. The muscles and bones used in these acts are looked at with a sufficiently great thoroughness to give the player an idea of their functions, and the figures used to illustrate this part of the book are enough to answer their purpose. The greatest interest to a non-player will probably lie in the chapters devoted to the explanation of "curve-pitching."

In these days, the sceptics as to the actual "curve" of the ball in any direction but downwards in its course from pitcher to catcher seem to have disappeared entirely, although it is not yet ten years since the writer was told by a professor of physics that such a thing was impossible, as being a violation of the laws of nature, this gentleman ascribing the sometimes violent efforts of the batter to reach an out-curve entirely to the effects of an "optical delusion." By what freak this sudden imperfection of eyesight should make its appearance he was unable to say. It has been an undisputed fact among ball-players that a pitched ball may be made to alter its course in a plane different from that naturally produced by the force of gravity, and that this alteration in course is at the command of the pitcher of the ball. The old explanation of the methods of production of these curves — given for the most part by scientific men — were laughable in many cases. In the book under consideration there is the first accurate description of the phenomenon that the writer has happened to see in print.

Bruises and dislocations are the principal accidents to which ball-players are liable that require immediate attention, and the value of the immediate application of ice to such injuries has been so often illustrated that the stories of recoveries told here are not in the least incredible. The advice, to let liniments alone, is good, as well as that suggesting persistence in the moderate use of a sore or strained member. The exercises suggested for putting a man in condition for active work upon the ball-field, and for keeping him so after he is there, are good, and it is refreshing to see the great importance of "going slow" at first thoroughly insisted upon.

Altogether, the book is a valuable one to put in the hands of young enthusiasts, and it might be well for some of the older heads to look at it — the better to be ready to help the boys in learning the "great American game."

H. C. E.

The Disorders of Menstruation. By Edward W. Jenks, M.D. Being No. 11 of the Physicians' Leisure Library. Geo. S. Davis, publisher. 1887.

This little manual considers amenorrhœa, menorrhagia and metrorrhagia, dysmenorrhœa and derangements of the climacteric. It covers the whole ground of the subject in a clear, practical and concise manner, and though there is nothing novel in it, it will serve as a safe guide for the practitioner to follow. It is in a convenient form to be put in the physician's sachel and read in the intervals of busy work.

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THE PRESIDENT'S PENSION VETOES.

FEW doctors can have escaped the importunities of the old soldier who desires to connect his own military service with the Pension Bureau. Some of the most uncomfortable duties that fall to the lot of the conscientious physician lie in connection with pension applications. Wife, children, relatives, friends, and legal adviser of a deceased soldier conspire to obtain from the doctor some sort of an affidavit that will assist in gaining a few dollars a month from the government. The doctor might be excused for saying in his wrath that the patriot legions of twenty years ago are transformed into cormorants, if he retracts it when his wrath has passed away.

Perhaps nothing more significant has ever been published than a recent pamphlet which has been freely circulated among physicians — and we know not how much wider — entitled the "Soldier's Manual." It contains no reference whatever to a soldier's duties, but is made up of a digest of the United States pension laws and kindred subjects. The government has wisely endeavored to care for its old soldiers, but its very liberality begets greed. The necessary rules of the Pension Bureau seem sometimes hard, and attempts to evade them are numerous. Congress is often appealed to to override regulations, and the frequent personal bills are not very closely scrutinized. The President has reviewed somewhat closely these special pension bills and issued a series of special pension vetoes, which, from their number, if for no other reason, attract very general attention, and are praised or condemned, usually according to the political views of the reviewer. Of most of these pension vetoes we do not pretend to judge, but many of them are so strictly medical in the questions involved that it seems almost a duty to consider them, if it can be done, from a pathological standpoint.

Universal medical experience will endorse the remark that most careful scrutiny on the part of pension authorities is necessary to avoid fraud. To preserve the beneficent character of the pension as a gratuity from a grateful country to those who have suffered for their country's sake, it must not be given to those whose disabilities were incurred in drunken brawls or in attempts to desert, nor ought it be granted on fraudulent certificates.

To remain as it ought — a mark of honor — a pension must be granted on reasonable grounds, and not because of the importunity of the applicant or the favoritism of his congressional representative, and the vetoes of the President seem calculated to restore the pension to its proper status.

One class of the vetoes seems specially worthy of the doctor's notice; namely, those relating to the surviving relatives of soldiers who have committed suicide. To pension the wife and family of a suicide because of his death would present to some of our old soldiers a most dreadful alternative. Doubtless many of them would trouble their consciences not a little as to their duty did they know that their death would insure an income to those dependent upon them, and it is not impossible that suicide might be urged upon some of them by the relatives who expect to survive.

In regard to one particular case, the President says: "The verdict returned upon the coroner's inquest, founded upon a friendly examination of all the facts surrounding the melancholy death of this soldier, made at the time of death and in the midst of his neighbors and friends, both by what it contains and by what is omitted, together with the other facts developed, lead me to the conclusion that if a pension is granted in this case, no soldier's widow's application based upon suicide can be consistently rejected."

At the Paris International Medico-Legal Congress of 1878, Dr. Jeannel made the very striking proposition that the corpses of all suicides be furnished to the medical schools for dissection, except in cases where the victims were insane or irresponsible. He believed that such a regulation would seriously diminish the number of suicides. It was objected that such a law would aggravate the situation of families so unfortunate as to have a suicide occur in their midst, to which it was answered that the consequence upon the family was one of the real arguments for the passage of such a law, because the suicide, if sane, would consider the consequences of his act, and the results to the family must operate in many cases as an enormously powerful restraint. If disastrous consequences to surviving friends be regarded as a restraint, the opportunity to benefit one's family would certainly be an inducement to suicide.

There can be little doubt that cases arise for which the laws are not adequate, where Congress may wisely override the strict legal ruling of the Pension Bureau, as it has done with the executive approval in numerous instances. The recently issued report of the Pension Commissioner gives somewhat fully the manner in which special pension bills are investigated at the Pension Office, which shows that the greatest care is exercised in the matter.

This is not an attempt to prostitute the JOURNAL to political purposes, but simply to express what must seem evident to medical men, that some, at least, of the special vetoes are right and just, from a medical standpoint.

ON THE TREATMENT OF HÆMORRHAGES BY REVULSION OVER THE HEPATIC REGION.

THE *Bulletin Générale de Thérapeutique* (July 30th) contains an interesting article by Dr. L. H. Petit, in which this writer insists on the *rôle* of the liver in the pathogeny of hæmorrhages, and the benefits of revulsion over that organ. He reports seventeen cases, mostly examples of hæmorrhages from hæmorrhoids, from the nares (alarming epistaxis), from the lungs (hæmoptysis in the phthisical), in which the application of a large fly-blister over the liver promptly and effectually arrested the hæmorrhages. Many of these cases came under the observation of Professor Verneuil, occurring in his service; six of them were borrowed from Dr. Alexander Harkin's report in the *Lancet*, October 30, 1886.

Dr. Harkin, it will be remembered, treated his cases of epistaxis, bleeding piles, etc., by the application of a blister, eight inches by four inches, for eight hours over the region of the liver, to be followed by cotton-wool dressing. The *rationale* of this treatment is thus set forth: "The frequent occurrence of epistaxis in youth is evidently due to the excitement and hyperæmic condition of the liver and digestive organs during the period of active growth, and the constant demands on its functional activity. The liver at this stage closely approximates to the condition in after life which is the causal factor in the development of piles, and as such is equally amenable to treatment, in accordance with etiological principles; the derivative that cures the hæmorrhoidal flux as certainly puts an end to the epistaxis, the outcome of hepatic congestion." Dr. Petit takes the same view, and remarks that physicians and surgeons, from Galen downward, have been in the habit of treating rebellious epistaxis by the application of cups to the region of the liver when the blood flowed from the right nostril, and over the spleen when it flowed from the left; this practice, however, was wholly empirical, no reason being assigned for it. To Verneuil belongs the credit of systematizing this mode of treatment (he makes use, sometimes, of large fly-blisters, sometimes of cold douches over the hepatic region), and of showing the intimate relationship which exists between the hepatic circulation and that of the mucous membranes of the entire alimentary tract, especially of the hæmorrhoidal vessels of the rectum. Verneuil also calls attention to the frequent coincidence between hepatic congestions, whether occurring in connection with the latent and benign affections of the liver, or in cirrhosis and epistaxis, or bleeding piles, the latter yielding when the hepatic affection is relieved.

In confirmation of this position, an interesting case is reported which occurred in the practice of Dr. Tachard, of Colombes, (cirrhosis, epistaxis, arrest of the hæmorrhage by a blister); another occurring in the service of M. Reclus (rebellious bleedings from mouth and nose, cure effected by a blister over the right hypochondrium); a third communicated by Dr. Salles, of Boulogne on the Seine, in which gingival and nasal hæmorrhages, accompanying cirrhosis of the liver, were kept in abeyance by like means. Even grave hemoptyses, occurring in phthisis, have proved amenable to the same treatment.

Dr. Petit terminates his paper with the following conclusions:

"Divers spontaneous hæmorrhages, medical or surgical, supervene in persons who are subjects of a chronic hepatic affection.

"A great many facts having demonstrated that there exists a close relation between spontaneous hæmorrhages and chronic affections of the liver, it seems logical to treat the hæmorrhage by revulsion, practised over the region of the liver. This treatment has determined the final arrest of the blood-flow in the majority of cases.

"Whenever, then, the practitioner is in presence of a patient suffering from spontaneous hæmorrhage, he will find an indication to examine the state of the liver, and if this organ does not present its normal characters, to apply a blister over the hepatic region."

MEDICAL NOTES.

— Dr. William Osler, Professor of Clinical Medicine in the University of Pennsylvania, has been appointed physician to the Johns Hopkins Hospital and Professor of Medicine in the Johns Hopkins University, at Baltimore. Dr. Osler took his degree at McGill University, Montreal. He subsequently studied in London, Berlin, and Vienna, and, in 1885, was appointed Gulstonian lecturer in the Royal College of Physicians, London, and in 1886, Cartwright lecturer in the College of Physicians and Surgeons, New York. Professor Osler resigned his chair at the University of Pennsylvania to accept the position at Baltimore. The clinic at the Hospital will probably be open to a limited number of physicians this winter, but not yet to medical students.

— The French minister of education has given his approval to the custom established for some time in Austria of pensioning professors who have reached the age of seventy, and pensions have already been granted to a certain number of professors, notably to Professors Bouchardat and Hardy in Paris, and Toundes in Nancy.

— The following delicious coroner's verdict is in print, apparently a specimen of Baboo English, that is English as written by a native of India. This was rendered upon an ill-fated Hindoo. "Pandoo died of the tiger eating him; there was no other cause of death. Nothing was left except some fingers, which probably belonged to the right or left hand."

— On August 31st, the chemist Chevreuil in Paris, celebrated his one hundred and second birthday. Of other chemists now living, Bunsen, in Heidelberg, is 77 years old; Professor Kopp, author of a "History of Chemistry," 71 years; and A. W. Hofmann, in Berlin, 70 years; Professor Fresenius, of Wiesbaden, has also reached the age of 70. Wöhler, died at 84; Dalton, at 78; Faraday, at 76; Gustav Rose, at 75; Regnault and Berthollet, at 74; Gay Lussac, at 72: Priestley, at 71; and Liebig, at 70.

—The *Lancet* says that Dr. Dumont, of Louvain, has undertaken a series of researches on the effect of coffee drinking on the urine, from which it appears that, though the diurnal quantity of urine is not seriously interfered with, the composition undergoes a very decided change. Dr. Dumont kept the subjects of his researches for some days on ordinary diet, the constituents of which were determined. During part of the time only was coffee added, the quantity being three cups — corresponding to about two ounces of roasted coffee — per diem. By regular and careful analyses of the urine, it was found that during the days when coffee was taken the urea passed was increased by about seventy-five grains. The effect on the urea was produced immediately the coffee was commenced, and as soon as it was omitted the quantity of urea returned to that which it had exhibited previously.

—The *British Medical Journal* says that the construction of the new waterworks at Yokohama, under the superintendence of General Palmer, R. E., was a formidable undertaking. The intake is about twenty-five and a-half miles from the filtering beds, and the work was rendered extremely difficult in various places by the rugged and hilly nature of the country, which necessitated the opening of a temporary road, the erection of several bridges, and the excavation of cuttings; but, in spite of all obstacles, the undertaking was completed within the specified time. The British consul at Yokohama, in his report, anticipates that the health of the town will be greatly improved by the introduction of a plentiful supply of wholesome water, and that it will prove instrumental in protecting the community against the ravages of cholera. In consequence of the success which has attended this undertaking, several other towns have applied for a similar water-supply, and the subject is now being carefully studied. In Tokio, also, arrangements are about to be made for improving the supply. The difficulty at present consists in providing the funds, amounting to about a million sterling. The city has 1,300,000 inhabitants, and enough water would have to be provided for 2,000,000. The question is a pressing one for Japanese towns, because the wells are, for the most part, fouled owing to their proximity to the rice fields.

NEW YORK.

— The New York State Medical Association held its fifth annual meeting at the Hotel Brunswick, October 9th, 10th, and 11th, with Dr. John Cronyn, of Buffalo, presiding. In addition to the usual addresses and a large number of separate papers, there was on each of the three days an elaborate, set discussion. The first was on "Nosography," introduced by Dr. Alfred L. Carroll, of New Brighton, Staten Island, and participated in by Drs. E. G. Janeway and C. A. Doremus, of New York; S. T. Clark, of Lockport; F. M. Ross, of Elmira; H. D. Didama, of Syracuse; and others. The second was on "Tumors" (general consideration of tumors from a surgical point of view), introduced by Dr. J. W. S. Gouley, of New York, and participated in by Drs. J. D. Bryant, F. S. Dennis, Stephen Smith, and W. T. Bull, of New York; C. B. Nancrede, of Philadelphia; C. T. Parkes, of Chicago; E. M. Moore, of Rochester; and others. The third was on "Puerperal Septicæmia," introduced by Dr. C. C. Frederick, of Buffalo, and participated in by Drs. W. T. Lusk, H. M. Biggs, and John Shrady, of New York; E. D. Ferguson, of Troy; F. W. Ross, of Elmira; and others. The annual banquet was held on Wednesday evening, and on Thursday the following officers were elected for the ensuing year: President, Dr. William T. Lusk, of New York; Vice-Presidents, First District, Dr. S. H. French, of Montgomery County; Second District, Dr. R. C. McEwen, of Saratoga County; Third District, Dr. Elias Lester, of Seneca County; Fourth District, Dr. T. D. Strong, of Chautauqua County; Secretary, Dr. E. D. Ferguson, of Troy; Treasurer, Dr. J. H. Hinton, of New York.

— In consequence of the prevalence of small-pox in certain districts of the central and western portions of the State, the State Board of Health has issued a circular giving minute details for isolation and disinfection, and urging the necessity of vaccination. The disease is said to have broken out in the Cattaraugus Indian reservation, and Dr. J. C. Davis, of Versailles, has been appointed by the Board to act as Health Officer on the reservation, subject to the approval of the Indian Commission, and charged with the duty of making general vaccinations.

Miscellany.

THE NEW OUT-PATIENT BUILDING OF THE BOSTON CHILDREN'S HOSPITAL.

The Children's Hospital moved into its present quarters on Huntington Avenue in December, 1882. When first occupied, the hospital consisted of a central administration building and one wing, which contained the two wards. A second wing was intended to complete the building. The fourth story of the central building had a separate entrance, and was intended for use when needed for the isolation of contagious cases.

As originally built, it was intended to devote the basement of the central or administration building to the out-patient service. When the building was first erected the horse-cars were not running on the avenue, and for a long time afterwards they ran only at comparatively long intervals, and in consequence the out-patient service was small. With the new facilities of the hospital, and in spite of difficulties in reaching the

place, it grew rapidly. As means of reaching the hospital have increased and its reputation has grown, the out-patient service has also grown, until the original quarters have proved entirely insufficient. Not only was the room insufficient and the ventilation inadequate, but the presence of so large a number of little patients with their parents was felt to be a source of danger, if not of present harm, to the more permanent patients on the upper floors.

A new building was soon seen to be necessary. The points of a desirable out-patient department were carefully considered until, after much thought, plans were agreed upon, and a building erected in accordance therewith, which is but just completed and occupied.

The new building comprises three stories and a basement. The third story is not intended for out-patient use. It has an entirely separate entrance, and does not communicate in any way with the lower stories. It is intended to be available for the complete isolation of patients with contagious diseases, thereby relieving the fourth story of the administration building from such use.

The entrance for out-patients is in the centre of the length of the building, where they enter through a vestibule into a spacious, well-lighted waiting-room, amply supplied with retiring rooms. A little room close by the entrance is intended for the immediate reception of any child that presents an appearance that arouses suspicion of contagious disease, or of such a state of filth as makes it an improper object to be in the same room with other children. At the right of the entrance is the record-room, where the previous record of an old case is looked up, or a preliminary record of a new case is taken. Opening from the other side of the waiting-room is a small room devoted to the surgeon in charge, and another room intended to be used as a sewing-room, and supplied with a sewing machine and other necessities.

Running from the waiting-room towards the Huntington Avenue front is a hallway, from which open on each side a series of small rooms, each containing a table and chair. Each of these rooms is intended for the reception of a mother and child, and in each one a child can be undressed and examined separately. It is intended to put children known to be particularly noisy and unruly into two rooms in the most remote corners, where their noise will be least likely to disturb and frighten those children still waiting in the reception room. There is also in the north-east corner of this floor a small room fitted up as an operating room, where such operations as may properly be done on out-patients can be performed. This little room presents some interesting features, with its rubber mat with corded edge under the operating table, and its general fittings for antiseptic work.

The basement contains rooms for work in plaster-of-Paris, with apparatus for suspending patients, and what may be described as a gymnasium for exercises intended to correct deformity or develop special limbs and muscles. There is also upon this floor a large room intended as a museum or depository for examples of various splints and models, and such plaster casts of deformities as naturally accumulate in such a hospital.

In the rear in a one-story addition is the workshop, with a gas engine to supply power, where the apparatus of the hospital is made.

The second story is devoted to the medical department. Here the number of small rooms is less, but sufficient to allow of auscultation and careful examination in separate apartments. There is also a room intended for use as a lecture-room. This floor also contains a dark room for photography, which has become an important adjunct to hospital service.

It is not easy to give a very accurate idea of this building by mere verbal description; but as a whole it presents as comfortable and convenient quarters for out-patient service as can be desired.

The new wing of the hospital proper is soon to be added, probably within another year.

THE TREATMENT OF WHOOPING-COUGH.

IN a leading article, the *Therapeutic Gazette*, September 15th, sums up the results of several reports on the value of antipyrin and of sulphur fumigation in controlling pertussis.

Dr. Genser in a paper read before the Society of Physicians in Vienna, states that he has treated more than two hundred cases of whooping-cough on two entirely different plans of treatment. In one class various medicinal powders were employed after the method of Michael, by insufflation into the nasal fossæ; the other class was treated by the administration of the antipyrin given internally. The plan of insufflation was employed in seventy-six cases, the powder of benzoic acid being used. The results obtained were only passable, the average treatment lasting for forty-three days. About the only advantage of this treatment being that, as a rule, it suppresses vomiting, although this advantage is greatly counteracted by the difficulty of application and the high state of excitement which its employment usually occasions. On the other hand, antipyrin administered by the mouth was generally efficacious, the author's results appearing to show that this remedy not only diminishes the number of spasms of coughing in the twenty-four hours, but also their duration and intensity. In the majority of cases the duration of treatment was not more than twenty-four days. The average dose was 1½ grains daily for each year of age, so that a child of five years would take in forty-eight hours fifteen grains of antipyrin given in syrup. In five cases complicated by pulmonary lesions this method only gave negative results.

Dr. Laborderie published in the *Bulletin Général de Thérapeutique*, May 15, 1888, results even more favorable. In eleven cases he obtained a complete cure in twelve to sixteen days, although he lost one case, a little girl of 1 year of age, and one of 3½ years from capillary bronchitis and broncho-pneumonia. In these two cases, where the attacks came on forty to sixty times a day, antipyrin appeared to have no useful effect. He also had an incomplete success in a child who had forty to fifty attacks a day. This child, however, was rapidly cured when moved to the country. Finally, in a child 10 years of age the treatment had to be abandoned on account of nausea, diarrhœa, and gastric distress.

Dr. Laborderie always employs antipyrin without any other internal medication, although he makes use of fumigations of turpentine. The dose which he employs has been from 5 to 15 grains for children up to two years of age, and from 15 to 60 grains for elder children and adults. He gave it in Vichy water

flavored with raspberry syrup. He recommends that the patients, after receiving this medicine should take a little milk or soup. He claims that children with rare exceptions support this method of treatment. It is not dangerous; it is easy to administer and to oversee; the spasms were rapidly calmed, and the period of decline occurs within a few days.

Mr. F. E. Manby, in *The Practitioner* for August, 1888, confirms the value of sulphurous acid fumigation in whooping-cough.

The method is the following:

"The children are in the morning put into clean clothes and removed elsewhere. All their clothes, toys, etc., are brought into their bedroom and sulphur is burnt upon a few live coals in the middle of the room. The fire is allowed to remain in the room for five hours, and then the windows and doors are thrown open. The child sleeps in the room the same evening. About twenty-five grammes (a little under an ounce) of sulphur to every cubic metre may be burnt; this is equivalent to rather more than ten grains per cubic foot. As the additional precaution was taken of having the day-room fumigated in a like manner during the night, the children practically lived in an atmosphere of diluted sulphurous acid gas for some days."

Mr. Manby claims that in every instance, without exception, his observation leads him to look upon the method as a practical cure in whooping cough; the cough is lessened in frequency, expectoration of the thick clogging mucus much facilitated, paroxysms lessened in violence, and sickness after them as a consequence scarcely known. The children pick up quickly, and in no case has the cough lasted in its form of reduced violence more than a fortnight after the treatment commenced. The action of sulphur can scarcely be attributed to anything but its germicide properties, so that the natural inference would be to combine sulphurous fumigation, which at best can do no harm, with the internal administration of antipyrin.

PHYSIOLOGY AS SHE IS TAUGHT IN THE PUBLIC SCHOOLS.

We have previously had occasion to refer to the defective and distorted character of some of the text-books authorized by school boards for the teaching of physiology (and of the effects of alcohol and tobacco). That the work accomplished is sometimes as unsatisfactory as the methods used, is shown by a thoughtful article by "a teacher" in the *Popular Science Monthly* for August. The curious hodge-podge produced in the minds of many pupils is illustrated by instances taken from the writer's own observation, and by others quoted from English reports on the same subject, from both of which we ask no apology for quoting the following somewhat extended citations:

"It is supposed, says the *London Architect*, that sanitary science may be taught as easily as morality by listening to a teacher reading from a book. The children fail to catch the words, or they attach no meaning to them. Here, for example, are verbatim copies of the exercises in one of the Greenwich schools:

"'Infections are brought on by bad smells, such as small-pox, measles, scarlet fever, glass-pox, s. c., they are brought on by bad drainerges suers; they must be well ventalated. Infection disease are caught by touching such as charcoal, chloride of lime, etc. Measles, feaver are called disinfectionous because they are catching. — Fainted. If a person as fainted, take her out in the open air lay her down with her head. And do the clothing round the neck and dashed cold water in the face and hand and put smelling salts to her nose. Degestion is paines in the head, paines in the stom-ach, bad tempers. From degestion comes consumption, information, head-ache, neuralgia.'

"In the English official reports we read that 'an examination of girls in board schools for prizes offered by the National Health Society revealed some curious items of information.' One reply to 'Mention any occupation considered injurious to health' was: 'Occupations which are injurious are carbolic acid gas, which is impure blood.' Another pupil said: 'A stone-mason's work is injurious, because when he is chipping he breathes in all the chips, and then they are taken into the lungs.' A third says: 'A boot-maker's trade is very injurious, because the boot-makers press the boots against the thorax; and therefore it presses the thorax in, and it touches the heart; and if they do not die they are cripples for life.' With a beautiful decisiveness, one girl declares that 'all mechanical work is injurious to health.' A reply to a question about digestion runs: 'We should never eat fat because the food does not digest.' Another states that 'when food is swallowed it passes through the windpipe'; and that 'the chyle flows up the middle of the backbone and reaches the heart, where it meets the oxygen and is purified.' Another says: 'The work of the heart is to repair the different organs in about half a minute.' One little physiologist replies: 'We have an upper and a lower skin; the lower skin moves at its will, and the upper skin moves when we do.' One child enumerates the organs of digestion as 'stomach utensils, liver, and spleen.'

"In the clever little book compiled by Miss Le Row, entitled 'English as She is Taught,' appear the following genuine answers by pupils in reply to questions upon physiology and hygiene. Presumably, most of these answers are from American pupils in American schools:

"'Physillogigy is to study about your bones, stummick and vertebry.' 'When you have an illness it makes your health bad as well as having a disease.' 'The body is mostly composed of water and about one half is avaricious tissue.' 'The body has an infinite number of bones joined together by the joints.' 'The spinal column is made of bones running all over the body.' 'Digestion belongs to the lower animals.' 'Digestion is the circulation of blood.' 'Digestion is reducing our food to plump.' 'Digestion is when food is taken into the stomach.' 'The gastric juice keeps the bones from creaking.' 'The eyes are set in two sockets in a bone which turns up at the end and then becomes the nose.' 'The three coverings of the brain are the diameter, the perimeter and the trachea.' 'The growth of a tooth begins in the back of the mouth and extends to the stomach.'

As an additional contribution to answers, we add the following, taken by the writer from the note-books of pupils of one of the *high schools* of this country:

"'Anatomy is dissecting of bodies generally lifeless.' 'Anatomy is study of parts of the body, physiology, study of action of parts, hygiene is *application* of these parts' (italics are ours). 'Kinds of bathing, adapted to the age, quantity, quality and health of the person.' 'Supernator are the muscles about the

back.' 'The hygiene of a muscle should have proper rest and exercise.' 'Hygiene is the study of the time and manner of the action of the muscles and large blood-vessels.' 'The mouth is the commencement of the alimentary canal, and it extends through the throat, œsophagus into the stomach.' 'The extent of the mouth helps the digestion of food.' 'Nervous system a decided part of the body.' 'A young person who goes to parties and has great excitement has generally some brain trouble, such as St. Vitus dance.' 'It is far more reliable to drive out the fire of a room and put on extra clothing than it is to put on no clothing and sit in front of a burning fire.' 'Soap is important in carrying off the fat of the body.' 'What is eaten by the body has sometimes been taken as food.' 'The third cavity is the pelvis, which contains the vital organs.' 'In a diet of twenty-four hours a man should eat some of all the nutritious articles.' 'The first step in digestion is mastication and insalivation. Second, the muscles of the gullet.' 'A person is in fair health when he has the affinity to accommodate himself to change of climate and the ability to endure.' 'Respiration is the exchange of carbolic acid for oxygen.' The substitution of carbolic for carbonic acid is frequently met with. 'The times for bathing depend on the age of location of and heat of the individual.'"

"These exercises may be thought amusing," says the English periodical already quoted, "but it should be borne in mind that every word represents more or less pain to some unhappy child in endeavoring to recall ponderous words which were without meaning. Education in sanitary matters is desirable, but, as it is conducted at present in public schools, it must injure children's minds by habituating them to the use of words which they cannot understand."

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 6, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	621	287	22.24	14.88	9.60	1.92	4.00
Philadelphia	1,016,758	344	124	15.00	18.00	3.50	3.90	3.90
Brooklyn	751,432	307	138	20.46	12.87	9.90	1.65	4.95
Chicago	760,000	285	109	23.45	22.11	7.00	4.55	7.70
St. Louis	449,160	178	77	32 48	12.88	10.08	1.68	15.12
Baltimore	437,155	158	76	18.30	10.08	5.04	4.41	5.04
Boston	407,024	171	69	22.62	13.34	10.44	5.84	5.84
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans	246,000	113	39	21.36	11.57	7.12	.89	5.34
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	96	35	31.20	21.84	10.42	4.16	4.16
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	125,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	24	8	29.12	16.64	20.80	4.16	4.16
Charleston	60,145	48	8	16.64	8.32	4.16	2 08	8 32
Portland	40,000	14	2	28.56	28.56	7.14	14.28	7.14
Worcester	76,328	39	—	20.48	20.48	10.24	5.12	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	31	15	35.53	12.92	12.92	9.69	6 46
Fall River	61,203	28	11	39.27	7.14	10.71	17.85	7.14
Lynn	51,467	17	0	17.64	29.40	5.88	5.88	—
Lawrence	40,175	16	4	12.50	6.25	6.25	6.25	—
Springfield	39,952	11	1	27.27	9.09	—	27.27	—
New Bedford	36,298	16	9	—	25.00	—	—	—
Somerville	33,307	13	5	46.32	7.69	38.45	7.69	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	11	6	—	9.09	—	—	—
Chelsea	27,552	11	0	9.09	—	—	—	9.09
Haverhill	24,979	10	3	—	30 00	—	—	—
Taunton	24,716	9	2	—	11.11	—	—	—
Brockton	24,784	12	3	8.33	25.00	8.30	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	6	3	16.66	25.00	16.66	—	—
Malden	18,902	5	1	20.00	—	—	—	20.00
Fitchburg	17,534	11	6	18.18	9.09	18.18	—	—
Waltham	16,851	3	0	—	33.33	—	—	—
Newburyport	13,839	5	1	—	20.00	—	—	—
Quincy	13,336	—	—	—	—	—	—	—

Deaths reported 2,610: under five years of age 1,090; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 568, consumption 371, acute lung diseases 185, diarrhœal diseases 215, diphtheria and croup 142, typhoid fever 88, whooping-cough 46, scarlet fever 29, malarial fever 26, cerebro-spinal meningitis 11, measles 10, small-pox one. From whooping-cough, New York 16, Brooklyn, Baltimore and Washington five each, Philadelphia, St. Louis and New Orleans three each, Cambridge two. From scarlet fever, New York 10, Philadelphia seven, Chicago six, Brooklyn four, Fall River and Lynn one each. From malarial fever, St. Louis, New Orleans and Washington six each, Brooklyn three, New York two, Philadelphia, Baltimore and Charleston one each. From cerebro-spinal meningitis, New York four, Chicago and Worcester two each, St. Louis and Baltimore one each. From measles, New York nine, Boston one. From small-pox, New York one.

In the 28 greater towns of England and Wales with an estimated population of 9,538,273 for the week ending September 22d, the death-rate was 18.0. Deaths reported 3,242; infants under one year of age, 1,049; acute diseases of the respiratory organs (London) 179, diarrhœa 325, measles 50, whooping-cough 61, scarlet fever 40, fever 38, diphtheria 29, small-pox (Hull) one.

The death-rates ranged from 11.1 in Bristol to 27.8 in Preston; Birkenhead 19.8; Birmingham 18.5; Bradford 20.2; Brighton 13.9; Hull 15.0; Leeds 22.3; Leicester 22.8; Liverpool 18.4; London 15.8; Manchester 27.6; Nottingham 14.5; Portsmouth 22.8; Sunderland 21.8.

In Edinburgh 17.5; Glasgow 19.2; Dublin 18.5.

The meteorological record for the week ending October 6, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Oct. 6, 1888.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather.[1]			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	8.00 A. M.		8.00 P. M.	Duration, Hrs. & Min.	Amount in Inches.
Sunday, ..30	29 98	44.0	54.0	36.0	65.0	52.0		58.0	N.W.		N.W.	7		5	C.		C.	.010	T.
Monday, ...1	29 76	48.0	52.0	38.0	64.0	94.0		79.0	S.W.		S.E.	8		12	F.		R.		.13
Tuesday, ..2	29.51	56.0	64.0	50.0	97.0	69.0		83.0	S W.		E.	6		11	R.		C.	20.00	.50
Wednes,...3	29.80	42.0	50.0	40.0	77.0	69.0		73.0	N.		N.	12		12	O.		C.	0.20	T.
Thursday...4	30.10	44.0	53.0	34 0	58.0	54.0		56.0	W.		W.	18		6	C.		C.		
Friday, ...5	30.04	57.0	69.0	47.0	77.0	73.0		74 0	S.		S.W.	12		12	F.		F.		
Saturday,..6	29.95	55.0	57.0	53.0	85.0	88.0		86.0	S.W.		E.	7		5	R.		R.		.24
Mean, the Week.	29.46		57.0	43.0				73.0											

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FROM OCTOBER 6, 1888, TO OCTOBER 12, 1888

MEACHAM, FRANK, major and surgeon, U. S A. Died at Fort Douglas, Utah, October 9, 1888, at twenty minutes past one, P.M.

DAVIS, WILLIAM B., captain and assistant surgeon, U. S. A. Is granted leave of absence for six months, by direction of the acting Secretary of War. Paragraph 12, S. O. 232, A. G. O., October 5, 1888.

MAUS, LOUIS M, captain and assistant surgeon. Is relieved from duty at Fort Schuyler, N. Y., by direction of the acting Secretary of War, and will report in person to the commanding officer, Fort Ponter, N. Y., for duty at the post. Paragiaph 10, S. O. 236, A. G. O., Washington, October 10, 1888.

SPENCER, WILLIAM G., captain and astistant surgeon, U. S. A. Is granted leave of absence for two months, by direction of the acting Secretary of War. Paragraph 11, S. O. 236, A. G. O., Washington, October 10, 1888.

BANISTER, JOHN M., captain and assistant surgeon. The leave of absence granted in S. O. No. 210, September 10, 1888, from this office, is extended one month, by direction of the acting Secretary of War. Paragraph 2, S. O. 232, A. G. O., October 5, 1888.

WILLIAMS, JOHN W., major and surgeon, on duty with batallion on 2d Artillery, now at Fort Wadsworth, N. Y. H. Is granted leave of absence for one month, with permission to apply to the proper authority for an extension of one month. Paragraph 1, S. O. 209, Headquarters Division of the Pacific. Governor's Island, New York City, October 4, 1888.

By direction of the acting Secretary of War, the following-named officers of the Medical Department will report in person on the dates set opposite their respective names, to the President of the Army Examining Board, Army Building, New York City, for examination for promotion

MERRILL, JAMES C., captain and assistant surgeon, Oct. 16.
MCCREERY, GEORGE, captain and assistant surgeon, Oct. 16.
JOHNSON, RICHARD W., captain and assistant surgeon, Oct. 19.

Upon completion of their examination the officers named will rejoin their proper stations. Paragraph 5, S. O. 231, A. G. O., October 4, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING OCTOBER 13, 1888.

BATES, N. L., medical inspector. Detached from the "Pensacola" and placed on waiting orders.

FARWELL, W. G., surgeon. Ordered to United States Receiving Ship "Franklin."

SCOTT, H. B., passed assistant surgeon. Detached from the New York Navy Yard, and ordered to the Naval Hospital at Mare Island, Cal.

MAGRUDER, A. F., surgeon. Ordered to duty at headquarters of the Marine Corps.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. —A regular meeting of the Society will be held Monday, October 22d, at the Medical Library, at quarter of eight, P.M. Reader: Dr. H. R. Stedman: Subject: "On Medical Advice regarding the Marriage of Subjects with a Personal or Family History of Insanity." Dr. S. J. Mixter will report "A Case of Porro's Operation for Obstruction by Uterine Fibroids, saving both Mother and Child."

F. B. HARRINGTON, M.D., *Secretary.*

OBITUARY. DR. JOSEPH SARGENT.

Dr. Joseph Sargent, for half a century an eminent practicing physician at Worcester, died of pneumonia after a few days' illness, on October 13th. He was the son of Col. Henry Sargent, of Leicester, and was born December 15, 1815. In 1834 he graduated from Harvard College, and after a year's study with Dr. Flint, at Leicester, entered the Harvard Medical School, and received a degree in 1837. After a year in the Massachusetts General Hospital, he studied for two years in Europe, and in 1840 began practice at Worcester. He rapidly gained the confidence of the people and of his colleagues, and by constant study has kept himself abreast with his profession in its remarkable growth of two generations. He was a Counselor and Vice-President of the Massachusetts Medical Society, and the founder of the Worcester Society of Medical Improvement, which has existed for forty years. He had great influence in the establishment of the Worcester Lunatic Hospital and in the building of the City Hospital and the Washburn Memorial Hospital. Dr. Sargent's interest was not confined to his profession; his was a rare combination of professional sagacity, business insight and integrity, and literary and scientific attainments. He held positions of trust in several Worcester institutions, and was a trustee of the recently established Clark University. For many years he was a member of the council of the Worcester Antiquarian Society, and his articles were always full of information and welcomed for their literary excellence. He possessed the cheerful temperament that makes a physician's presence in a sick room so welcome. In 1841 Dr. Sargent married Miss Emily Whiting of Cambridge, who survives him, with four children of mature years.

OPENING OF THE BUILDING AT THE CHILDREN'S HOSPITAL.

The Managers of the Children's Hospital, on Huntington Avenue, cordially invite the medical profession to visit the new out-patient's building on Saturday, October 20, 1888, from 10 A.M. to 4 P.M.

BOOKS AND PAMPHLETS RECEIVED.

Embryo of a Parasitic Entozoa from a Human Tooth. By Jabez Hogg, F.R.M.S., M.R C.S., etc. Reprint. 1888.

Remarks on Pelvic Inflammations and the Management of their Residues. By William Warren Potter, M.D., Fellow of the American Association of Obstetricians and Gynæcologists, Buffalo, N. Y. Reprint. 1888.

Electrolysis; Its Value in Diagnosis as well as in Treatment of Intra-Abdominal and Intra-Pelvic Tumors by the aid of a New Instrument. By Eugene C. Gehrung, M.D., St. Louis, Mo. Reprint. New York: William Wood & Co. 1888.

Hayes Process of, and Apparatus for Generating and Applying Anæsthetics. With Testimonials, and an Address on the Science of Anæsthesia, delivered to the Cincinnati Medical Society, December, 1887, by Dr. Hayes, of Pittsburgh, Pa.

Original Articles.

SOME GYNECOLOGICAL CASES TREATED BY THE FARADIC CURRENT.

BY F. H. DAVENPORT, M.D.,
Assistant in Gynecology, Harvard Medical School.

The increased attention paid to the value of electricity in various departments of medical knowledge is a sufficient excuse for bringing the results of my experience to your knowledge to-night. The number of cases I have to report is not large, nor can the result in many of them be called striking. They may, however, serve to throw some light upon the limits within which we may expect this agent to do good.

In no branch of medicine has electricity made such rapid strides as a therapeutic agent, as in gynecology. Within a few years Mundé has published an article on "Electricity as a Therapeutical Agent in Gynecology," in the *American Journal of Obstetrics*, and Engelmann has read a most elaborate paper on this subject before the American Gynecological Society, published in the first volume of their Transactions.

Apostoli, whom Engelmann, possibly with an unconscious wit, calls the apostle of gynecological electro-therapeutics, has familiarized us with his, it may be, extreme views of the possibilities of this agent, and recent standard works on diseases of women, are not complete without a chapter devoted to its consideration.

The application of electricity is by no means a simple matter, and aside from the abstruseness of the subject, the expense of the apparatus, and the expenditure of time necessary to carry out the treatment have undoubtedly contributed to its neglect. The batteries themselves are expensive, and the instruments of precision necessary to an intelligent appreciation of what is being done, necessitate an even greater outlay. Most writers claim that the application must be a prolonged one, fifteen minutes to half an hour, though Engelmann has had most satisfactory results from much shorter sittings, from two to eight minutes, the average being perhaps five. These objections are valid when one is prepared to treat a large number of cases including tumors, in the elaborate and precise way recommended by the distinguished writers above mentioned, but it has seemed to me that good results, equal to and even better than those obtained by other well-known methods, may be attained by this agent applied simply and with inexpensive apparatus.

One of the questions to be solved before beginning treatment in the given case, is which current to employ, the galvanic or the faradic, nor are the instructions for their use clearly laid down in most writings on the subject. Engelmann says the galvanic current, which is constant, has a decided chemical action, hence it is valuable above all for destroying morbid tissue when strong currents are used, for promoting absorption of morbid structures and stimulating healthy nutrition when weaker currents are used. The negative pole is the most active chemically, possesses the highest destructive power, and tends to produce hæmorrhage; the positive pole is less painful, sedative with mild currents, and is decidedly hæmostatic.

The faradic current, which is interrupted, exerts a mechanical effect upon muscular tissue, and is used to stimulate to contraction best with slow interruption of the current, while with very frequent interruptions it has a soothing effect. There is not apparently much difference in the therapeutic action of the different poles, though the negative pole is the more painful.

These are in general the principles upon which we apply the different currents, and though in the main the results have been satisfactory, yet longer and more careful observations are needed to enable us to decide which current is to be used, and how.

I have for some time been in the habit of applying the galvanic current in cases of nervous debility, where sleeplessness was a prominent symptom. A mild current given at bedtime along the spine for from ten to fifteen minutes, has given very good results. So, too, in cases of pain in the ovarian region, even though there were no pathological changes to be made out by vaginal examination, the galvanic current has given a certain amount of relief. For the past six months I have been using the faradic current in these cases, and as it seems to me with better success.

The battery which I have used has been the small battery of Gaiffe, which is probably familiar to you all. It is not a powerful battery, but I have almost never felt the necessity of a stronger current than this will furnish. Where the poles were to be used on the external skin I have used the metal electrodes, either covered with chamois skin or absorbent cotton. If one pole is to be applied to the vagina or uterus, an olive-shaped metallic tip on an insulated rod has been used. These tips come of different sizes, and can be either introduced into the uterine canal, or the larger sizes used in the vaginal cul-de-sacs. The usual duration of the applications has been ten minutes, rarely twelve or fifteen. I will give briefly the history of a few cases in which I have used the faradic current.

Case I. Mrs. B., consulted me in August, 1887. She is thirty-six years old, has had one child, one miscarriage. Her principal complaints are; constant backache, bearing down, dysmenorrhœa and menorrhagia, the sickness lasting two to three weeks, and using from twenty-five to thirty napkins. Examination showed the uterus in normal position, but enlarged, the cavity measuring three and one-half inches. Diagnosis, areolar hyperplasia. Applications of tincture of iodine and later impure carbolic acid, were made at intervals to the uterine canal, and she was given fluid extract of hydrastic canadensis in the intermenstrual period, and ergot at the time. The dysmenorrhœa was relieved, and the amount of the flow lessened, so that in December she used only nine napkins. Since then the average has been twelve to fourteen. In December, a Chadwick pessary was introduced to relieve some of the pressure from the heavy womb. This helped the backache and bearing down, but the size of the uterus remained the same. April 2d, began faradization with one pole against the cervix, the other on the abdomen over the fundus uteri. This was applied twice a week for ten minutes. The second day following the treatment there was always increased pain, but on the whole the patient felt better. April 30th, the uterus measured two and three-quarters inches, and May 16th, two and one-half. During the first few treatments the patient distinctly felt the uterus contract rythmically at intervals of perhaps a minute, such contractions being accompanied by pain.

[1] Read before the Boston Society for Medical Observation, June 4, 1888.

CASE II. Mrs. S., first consulted me in March, 1886. She was four months pregnant, and severe flowing had just come on. Miscarriage occurred that night, and the placenta, which was adherent, was removed with fingers, curette and placental forceps the next day. She gave the following history: Had been married eighteen years, had three children, and this was her fourth miscarriage. Menstruation, which had been scanty and at irregular intervals before marriage, had been gradually growing more profuse, until it now occurred every twenty-four days, and lasted a week. The flowing was profuse, accompanied with clots. On account of the menorrhagia, she had been curetted three times with but little effect on the amount of the flow. Suffers a great deal from backache, bearing down pain, especially before the sickness, constipation, pain in the left ovarian region. An examination after the patient had recovered from the miscarriage, showed subinvolution of the uterus and vagina, the uterus retroverted and flexed, the cavity measuring four inches, cystocele and rectocele, less from loss of the perineum than from the laxness of the vagina. The womb was restored to its normal position by systematic packing, and held in place by a soft rubber bulb pessary. The length of the pessary, five inches, gives an idea of the amount of the subinvolution present.

The pessary was worn a year with comfort, but there was little change in the size of the uterus. March 1, 1887, the operation on the posterior wall was performed. This was followed by a considerable amount of nervous prostration, from which the patient recovered slowly. Her local symptoms improved after the operation. Menstruation was less profuse, backache and bearing down had disappeared.

March 17, 1888, began faradization to the uterus. One pole was passed into the uterine canal as far as the fundus, the other placed on the abdomen. This method of application was found to be painful, and was followed by considerable soreness the next day; the olive-pointed electrode was, therefore, substituted, which was passed just within the external os. Applications were given every other day, except during the menstrual period, for two months. The uterus then measured on three different times two and three-fourths inches, three and one-half, and three inches. This variation seemed to me to depend upon the time of the month when the measurement was taken, as the larger depth, three and one-half inches, was found just before the menstruation. Two days after the flow it was three inches, about midway between the two periods it was only two and three-fourths. There has been a noticeable improvement in the patient's general condition and strength. The tone of the vagina has improved, so that a smaller pessary will soon be needed.

CASE III. Miss R., thirty-three years old, consulted me in February, 1888, with the following symptoms: For some months has been troubled with pain in both groins, especially the left; has constant backache; menstruation regular, but scanty, using from three to six napkins, and inclined to grow less from month to month. She has usually some dysmenorrhœa, and is also troubled with slight leucorrhœa. Has indigestion, soreness in pit of stomach, sour eructations, and constipation. Vaginal examination showed an enlarged, sensitive, and prolapsed left ovary, which was two or three times its normal size. There was also slight endocervicitis. The faradic current was applied from the left cul-de-sac of the vagina as near the prolapsed ovary as possible to the abdomen, over the ovarian region, for five minutes, and for five minutes over the stomach and bowels. The treatment was begun February 24th and given every third day, and there was almost immediate improvement in the digestive symptoms. March 17th, after seven treatments, the prolapsed ovary could not be felt *per vaginam*, and the patient reported herself as feeling well, and discontinued treatment.

CASE IV. Mrs. H., thirty-two years old; one child fourteen years ago. Had a very severe laceration of the cervix and perineum, both of which were operated on: the cervix in 1885, and the perineum in 1887. In September of that year she came under treatment again for pain in her left side, situated two or three inches above the groin, very severe for two or three days before the catamenia, and relieved by the onset of the flow. When the flow stops for a day, which it is apt to do, the pain is excruciating. There is at times pain during the interval, and a constant feeling of soreness. Her general health has been very much improved since the two operations. Vaginal examination revealed nothing but a possible increased thickening of the left side.

The galvanic current was first tried, nine to twelve cells of the McIntosh battery. This application was followed by sleeplessness and depression. After several treatments these effects ceased, but there was rather an increase of pain for twenty-four hours, and when it did reappear it was more severe than before. Treatment was discontinued. March 2, 1888, faradization was begun, and applied twice a week for two months from the vagina to the abdomen part of the time, and part of the time from one side of the abdomen to the other. The relief to the pain was quite marked for two days following the application, and, on the whole, its severity was lessened. The pain at the last menstruation was not so severe.

CASE V. Mrs. G., twenty-five years old; married five years; no children. Was well until marriage; then menstruation began to be delayed, until it now occurs at a varying interval of from five to eight weeks. It lasts five days, and she flows rather profusely, using twenty-five or more napkins. She suffers considerable pain all over the abdomen the first twenty-four hours, so that she cannot bear the weight of the bed-clothes. She has, also, cramp-like pains and pain in the thighs. Suffers somewhat from leucorrhœa. Has constant backache and pain in both groins. A satisfactory examination being impossible on account of the sensitiveness and the thickness of the abdominal walls, ether was given. The examination showed an enlargement of both tubes and a general thickening of the tissues, in which the ovaries could be felt, but from which they could not be isolated. The uterus was normal.

The faradic current was first applied from each cul-de-sac to the abdomen, the only apparent effect of which was a diminution of the soreness of the abdomen. The menstruation in April, which occurred after a few applications, was, if anything, more painful, but the amount was less, only seventeen napkins being used. The constant pain in the back was now the most annoying symptom, so the method of application was changed. The positive pole was placed over the painful region of the back, and the negative over each ovarian region for five or six minutes, and as strong a current as could be borne was used. This was sometimes as much as the small battery would give.

The result was the entire relief of the backache for three days, and only a slight return on the fourth, and this, too, in spite of unusual fatigue. A vaginal examination at this time showed marked improvement in the condition of the left side, both as regards the amount of thickening and the sensitiveness. Very little change on the right.

Case VI. Mrs. F. Married for fourteen years. One child thirteen years ago. One miscarriage. She has had a history of chronic invalidism dating from child-birth. Had her perineum operated on at the City Hospital four years ago, and following it had a pelvic abscess. Later her uterus, which was retroflexed and adherent, was partially replaced by packing at the Free Hospital for Women. When she consulted me in May, 1887, I found her uterus still retroflexed, and an extremely sensitive mass to the left. Her principal symptoms at that time were severe and constant pain in the left side and back, dysmenorrhœa and great weakness. Under prolonged treatment by packing, the uterus was got nearly forward, but was held a little to the right side. The left side was too sensitive to admit of a pessary being worn which would hold the uterus where it should be. January 16, 1888, applications of the faradic current were begun, and kept up for two months, twice a week, one pole in the left cul-de-sac, the other on the abdomen. The only effect was a slight diminution of pain for, at most, twenty-four hours after the application, and this result did not always follow.

In April she was examined under ether, and the mass was clearly made out to be an enlarged tube and ovary of the left side. In view of her long history of suffering, and the failure of ordinary methods of treatment, the removal of the diseased tube was advised, and she will enter the hospital in the fall for that purpose.

Case VII. Mrs. T., thirty-six years old; a widow. Has had one child, fourteen years old, and one miscarriage. Two years ago had an operation for double laceration of the cervix performed. She consulted me again in November, 1887, on account of a profuse watery discharge from the vagina, beginning two days after menstruation, and lasting until four or five days before. This discharge is clear, odorless, non-irritating, and necessitates the use of a napkin. It is apt to occur in gushes, especially on change of position. She complains of pain in the right side. Menstruation lasts eight days, and is more profuse than formerly. Examination under ether showed the uterus enlarged to the size of two fists, more especially towards the right. The cavity measured four inches in depth, and nearly normal in direction. Right ovary normal; left ovary enlarged to size of hen's egg; not very hard. Diagnosis: Interstitial fibroid, enlarged left ovary.

Faradization was begun early in February of this year, and treatments were given every other day. The March sickness was very much less in amount, and the watery discharge during the inter-menstrual period was confined to a few days. The pain in the right side was diminished. The method of application was from the right cul-de-sac to the abdomen. Improvement continued in April. Treatment was then suspended, as the patient left town for the summer. There was no perceptible decrease in the size of the tumor. A letter dated May 13th, says: "I am now unwell, this time just on time, and very little for me. I am even better than usual.

Case VIII. Mrs. P. was operated upon by Dr. Baker at the Free Hospital for Women in 1882 for the removal of tubes and ovaries. She made a good recovery, and was able to go to work and earn her own living. In October, 1887, she was again admitted to the Hospital, complaining of pain in the abdomen. Under ether a small fluctuating cyst was made out to the left of the uterus, which was aspirated and several ounces of serous fluid drawn off. In December she returned with a history of pain and soreness in the abdomen to the left of and a little higher than the umbilicus. No cause could be detected for it on vaginal examination, and it was decided to be neuralgic in character, and faradization was recommended. This was applied from one side of the abdomen to the other, moving the poles about from place to place for ten minutes every other day for several weeks, with complete relief to the pain. The intervals were made longer and longer, and finally treatment was suspended as the pain did not return.

These few cases illustrate to some degree what classes of diseases may be expected to be benefited by the use of the faradic current. Inasmuch as its principal effect, especially with slow interruptions, is to stimulate muscular fibre to contraction, we should expect it would be of service where there was a lax atonic condition of the muscular structure of the uterus, such as we find in subinvolution. The first two cases were of this class, and the improvement in the size of the uterus after a short course of treatment was very marked.

The effect of the current with frequent interruptions is of a soothing character, and is shown by the relief to pain following its use. Four cases were characterized by pain, usually in the back and one or both groins, in all of which there was found evidence of disease of the appendages of one or both sides of the uterus. Case III, where one ovary was enlarged and prolapsed, but freely movable, improved the most in the shortest time. In less than a month the ovary could not be felt. Case IV, where there was an indefinite thickening of the left side, apparently the result of some old inflammatory process, the result was less satisfactory. In Case V, with both ovaries and tubes more or less glued together by inflammatory products, there was considerable relief to the pain and an improvement in the condition of the left side, as shown by the vaginal examination. Case VI, with a long list of chronic invalidism dating from the birth of her child, constant suffering, history of pelvic abscess, and where the examination showed a probable pyosalpinx, did not improve at all.

These different results in the different cases would lead us to expect good results from the faradic current where the tissue changes in the tubes and ovaries were slight, or where there was not much inflammation. Cases of simple prolapse, or of neuralgia of the ovary, would be most likely to respond to this form of treatment, and the result is probably due to a combination of both effects, that of stimulation to the muscular structure, perhaps, too, to the muscular coat of the arteries, thus helping the circulation, and of the soothing effect of the current with frequent interruptions.

Case VII, that of fibroid, though no diminution in the size of the tumor was apparent, improved markedly as regards the menorrhagia and the watery inter-menstrual discharge; I should, of course, expect more from the galvanic current in such a case.

Case VIII was one of pain, having its seat either in the abdominal walls or the coats of the intestines, and independent of the uterus. It was at times more an extreme soreness rather than a pain. Here the faradization did excellent service.

My cases are too few and my experience too limited to warrant any great expectations from this agent. It is not a panacea, nor does it work magical cures. I have, however, become convinced that cases of the character of those described in this paper have improved more rapidly than when treated by other methods. These are cases for which I would have applied tincture of iodine and glycerine dressings, and I think the faradization has worked decidedly better. The immediate effects of the treatment have been more favorable. Usually the application has been followed by a feeling of restfulness and quietude of the nervous system, which has lasted for several hours.

I am well aware of the imperfections in my method of applying it. The battery is simple, without any means of indicating or regulating the number of interruptions, and it has been necessarily empirical. I have so far failed to see any harm from its use, and my results have been sufficiently satisfactory to encourage me to make further trial of it.

VALVES IN THE VEINS OF THE HUMAN INTESTINES.[1]

BY W. S. BRYANT, A.M., M.D.

HISTORY.

CHARLES ETIENNE described valves in the portal system of man, which he called apophyses, and which he compared to the valves of the heart. Bauer met valves in the short veins which run from the stomach to the splenic veins in man, which Cruveilhier was unable to verify.

Milne Edwards says that among mammals there are no valves in the portal system, but that in some species one meets in these vessels valves more or less numerous.

"Dr. Cresp, of England, has described valves in the splenic veins in some of the inferior animals. In one of the mesenteric veins of the reindeer he showed forty-two pairs of valves." (From the *N. Y. Med. Journal*, 1865.)

Hyrtl, in the *Lehrbuch der Anatomie*, says: "Only in the portal vein of the rodents have I found a very pretty spiral valve of three to eight revolutions."

Sappey has described some valves belonging to the portal system of veins. These were found in the falciform ligament of the liver in very small veins.

Dr. Hochstetter recently, in the *Archiv für Anatomie und Physiologie* (1887), from whose article I take the liberty to quote at some length, because his is the most complete work on the subject, notes the following observations, which I have been able to confirm for the most part. He found that in the newborn infant the venous branches upon the stomach were furnished with valves, one in each minor branch, very rarely two. These valves were bicuspid, and usually placed in those vessels at or near their openings into the main branches. The branches of the coronary vein of the stomach oftentimes appeared to have a relatively small number of valves. In the great omentum the veins had valves at the venæ gastro-epiploicæ, and wherever smaller branches emptied into greater. "With increasing age, the valves become little by little incompetent: first, in the gastric branches of the vena gastro-epiploica dextra near the pylorus, next along the great curvature in the branches of the vena gastro-epiploica sinistra and in the venæ gastricæ breves, so that they persist longest in the branches which empty into the communication (if there is any) between the two venæ gastro-epiploicæ. Towards the twentieth year of life no venous branches along the great curvature of the stomach seem any longer to possess competent valves. Comparatively late the valves of the superior branches of the coronary vein become incompetent, and, last of all, usually those in the veins of the great omentum, where I sometimes found, even in very old people, perfectly competent valves."

"The valves become incompetent with increasing years by becoming smaller little by little, so that the two opposite edges of the valves no longer touch when the vessel is completely filled. Finally, only two bow-shaped linear seams, corresponding to where the valves had been attached, remain, and these can disappear, so that no trace of the valves is left." Dr. Hochstetter goes on to state that in many animals valves are found in the gastric veins, and in some they are more numerous than in man.[2] In the horse, he found them throughout the gastro-splenic veins. He also found them in the main, as well as the small branches of the gastric veins in antelope dorkas, sheep, goat, and in carnivora (dog, fox, cat, and otter). They were most numerous and best developed in the dog and cat. He found valves also as well developed and as numerous in the horse and hog as in the beasts of prey. In the rabbit he found only a very few valves, and these were in the gastric veins; while in the hedge-hog and bat (vesperugo noctula) he found none. On a close examination of two monkeys, he found good evidence of valves in the smaller veins, especially towards the great omentum and here and there in the branches of the gastric tributaries of the venæ gastro-epiploicæ, or there were dilatations, indicating the former presence of valves. Dr. Hochstetter says it is not surprising that the valves in the branches of the portal vein become incompetent with age when we consider that many of the valves of the extremities do not last to maturity.

METHODS.

Professor Dwight has aided me with his able supervision in making the following observations:

Last winter, while making general injections of the abdominal veins in dogs, I noticed that the injecting mass rarely entered the small veins of the intestines, and, on close examination, found the obstruction was due to valves. I then made injections of the portal system in several animals and in the infant at birth, and lastly in adult man, with what results will be shown later.

The methods I used were calculated to show only competent valves. A coarse injecting mass that

[1] A Graduation Thesis. The investigations were made in the Anatomical Department of the Harvard Medical School in the winter of 1887-8.

[2] Henle had already mentioned valves in the branches of the portal vein of mammals. Weigle found them in ruminants and the horse. G. Leising, C. Müller, and F. Müller mention some valves in the splenic vein of the domestic animals.

would not pass through the capillaries, such as gelatine thickened with Prussian blue. was used. If competent valves occurred, their presence was at once shown by the arresting of the mass in the course of the vein. When the mass is thus brought to a standstill, a minute examination is necessary to show the nature of the obstruction, and a microscope of low power is useful.

A number of the valves discovered in this way, with the vessel still distended, were hardened and sectioned with a microtome. The valves were then seen cut at various angles according to the plane of the section.

Figure 1 is from a microphotograph by Mr. G. W. Fitz, of a vessel from the jejunum of a woman, prepared and cut in the preceding way. The section is longitudinal to the vessel dividing the two cusps of a valve.

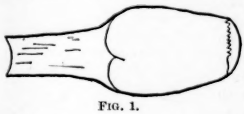

Fig. 1.

For a thorough view of the structure of the valves in contradistinction to their position, clear gelatine can be used for an injecting mass. The advantage of this is its transparency, for when a vein having a valve distended with clear gelatine is cleanly dissected, the outline of both its parts can be seen through the walls of the vessel, either with the naked eye, if the valves are large, or with a low power of the microscope if they are in the smaller veins.

OBSERVATIONS.— ANIMALS.

In the search for valves the veins of the intestines in the following animals were injected — guinea pig, rabbit, cat and dog. No evidence of valves was found in the guinea pig. In only one rabbit the veins of the last four or five inches of the large intestine were found well furnished with valves. These valves were placed along the attached border of the intestine in the mouths of the venæ breves. Figure 2 shows a portion of that intestine (rabbit), natural size, with the valves diagramatically represented.

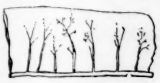

Fig. 2.

The cat was found to have a considerable number of competent valves at varying intervals along the intestine. They were usually most numerous in the vicinity of the cæcum, above and below, and occurred in a double series, one at the mouths of the venæ breves, and the other at the mouths of their principal tributaries.

The dog was found to be furnished with a more efficient set of valves than any of the other animals examined. The valves were found the whole length of the intestine with only here and there a spot where the injecting mass had entered the fine veins. In these places there was usually some indications of the presence of an incompetent valve. The valves usually occurred in a double series, more rarely triple or single. The most constant valves were at the mouths of the main tributaries of the venæ breves. The next most constant were at the mouths of the venæ breves, and the least constant were placed somewhere in the secondary tributaries. In one dog a valve was found in the inferior mesenteric vein a short distance from its lower extremity.

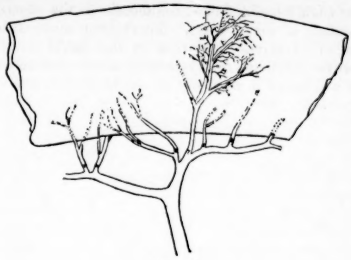

Fig. 3.

Figure 3 represents a portion of a dog's small intestine, actual size, with diagramatic valves.

MAN.

Infants at birth, children, and adults were examined.

INFANTS AT BIRTH.

In infants, valves were found at irregular intervals along the whole course of the intestines, more numerous on the large intestines than on the small. On the large intestine they occurred in the intestinal veins (venæ breves) at or near their mouths, and sometimes in the mouths of the main tributaries of these veins. This was more frequently the case on the cæcum. The number of valves varied with the individual; in the majority of cases more than half of the venæ breves of the large intestine contained valves.

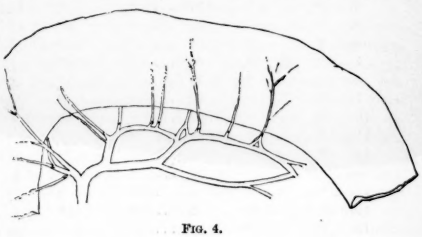

Fig. 4.

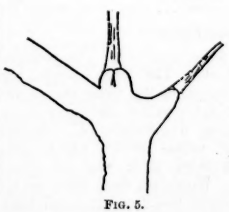

Fig. 5.

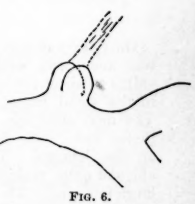

Fig. 6.

Figure 4 is a portion of the large intestine of an infant at birth, one and one-half natural size with diagramatic valves.

Figures 5 and 6 are from microphotographs by Mr. G. W. Fitz, of the valves themselves of the large intestine, injected with clear gelatine, showing the outline of both cusps of a valve, through the anterior wall of the vein. On the small intestine the venous valves were arranged in somewhat the same way. They were found in the intestinal veins (venæ breves) at or

near their mouths, and at the mouths of the superficial branches of these veins. There is a much smaller number of valves here than in the large intestine; however, they are rarely entirely absent and occasionally are found in as many as one in five of the venæ breves.

FIG. 7.

Figure 7 is the portion of the small intestine of an infant at birth, twice the natural size, and with diagramatic valves.

The following table shows the percentage of valves found in a number of the infants examined, taking 100 as the greatest possible number; that is, one at the mouth of each one of the venæ breves:

No. 1.	In large intestine,	100%	...	In small intestine,	20%
2.	"	"	100	...	"	"	$\frac{3}{5}$
3.	"	"	90	...	"	"	$\frac{1}{2}$
4.	"	"	87	...	"	"	$1\frac{1}{5}$
5.	"	"	85	...	"	"	12
6.	"	"	84	...	"	"	4
7.	"	"	80	...	"	"	$\frac{1}{5}$
8.	"	"	77	...	"	"	$\frac{1}{10}$
9.	"	"	63	...	"	"	$\frac{1}{100}$
10.	"	"	32	...	"	"	1
11.	"	"	25	...	"	"	10
12.	"	"	20	...	"	"	0
13.	"	"	10	...	"	"	$\frac{1}{2}$
14.	"	"	4	...	"	"	$\frac{1}{10}$
15.	"	"	2	...	"	"	0
16.	"	"	0	...	"	"	$\frac{1}{20}$
17.	"	"	0	...	"	"	0

CHILDREN.

Only three children were examined. The youngest was about two weeks old. The large intestine had valves in about ten per cent. of the venæ breves, and in the small intestine three valves only were seen. The next child was about five months old. In this there were only four valves found which were on the jejunum. The third child was ten years old and quite rachitic. No valves were found on the large intestine. The valves found on the small intestine were most numerous in the jejunum. There were twelve valves in the venæ breves, and thirty valves in as many superficial branches of the venæ breves. These superficial tributaries arise from the surface of the intestine and empty into the venæ breves a short distance from the intestine.

ADULTS.

A number of human adults were examined with the following results. Few valves were found in any one individual, even the youngest, and it did not appear that age after adolescence had much influence on the number of valves on the intestines. When the veins in the other parts of the great omentum were intact, I noticed that valves were less numerous along the free border in those veins which in the erect position would be nearly horizontal. Also that the disappearance of valves seemed to begin in one or two of the main veins lying near the centre of the omentum, and that the valves disappeared in the direct course of these veins before they did in their tributaries.

In the intestines of most adults there were a few valves remaining in the venæ brevis. These were usually on the ileum near the cæcum.

Figure 8 is from a microphotograph by Mr. G. W. Fitz of a valve from the cæcum of an adult. The injecting mass is clear gelatine, and the outline of both the cusps of the valve are seen clearly through the wall of the vessel, frequently on the jejunum. They are most numerous at the mouths of these veins, but there are sometimes two more sets of valves in other portions of the superficial vessel, making in all three sets of valves.

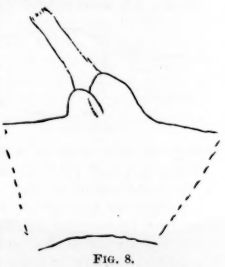

FIG. 8.

As autopsies were the chief source of material, in but few cases the whole intestine could be examined, and in many only a small portion, so that the table is not as complete as might be desired.

The following table shows the number of competent valves found in the various parts of the intestines of human adults.

No.	On Cæcum.	On rest of Large Intestines.	On Small Intestines. In venæ brevis.	On Small Intestines. In superficial branches.	Total.
1	5	2 on ascending colon.	22 (2 feet examined.)	56 (2 ft. examined).	85
2	Not exam.	6	3	43	52
3	1	11	18	20	50
4	1	None in ascend. col.	9 (mostly in ileum).	37 (mostly in jejun.).	47
5	None.	3	7	23	34
6	"	5 (also 4 non-comp.).	3 (mostly in ileum).	15 (mostly in jejun.).	23
7	"	6	13 " "	None.	19
8	"	None.		12	13
9	"	1	3	7	11
10	5	None in ascend. col.	Not examined.	Not examined.	5
11	None.	" "	None.	3	3
12	"	None.	"	None.	
13	"	None.	"	"	
14	"	None.	"	"	
15	Not exam.	Not examined.	"	"	
16	"	"	"	"	
17	"	None in transver. col.	Not examined.	Not examined.	
18	"	" "	None in jejunum.	None in jejunum.	
19	"	"	Not examined.	Not examined.	
20	"	Not examined.	None (2 ft. exam.).	None (2 feet exam.).	

The valves of the intestinal veins, like those of the rest of the portal system, are bicuspid. They are also thin and delicate, and in the infant extremely elastic. In man the line of contact of the two halves of the valves, in the majority of cases, is nearly parallel with the course of the intestine.

The number of subjects intermediate between the infants at birth and the adults which were examined is very small, and the conclusions based on them may have to be altered after a wider experience.

CONCLUSIONS.

These observations show that at birth the valves on the intestines are quite numerous in man, and at this age they are more abundant on the large intestine. Also that in a few months the valves either disappear or become incompetent, with few exceptions. In adult man there are usually a few valves, and these are more abundant in the small intestine, especially in the superficial tributaries of the venæ breves. These valves are more numerous in the jejunum, and disappear as we approach the cæcum.

Though the valves just described were discovered since Hochstetter's paper was written, his remarks on the significance of valves in the portal system will apply to them. After alluding to the fact that the presence of valves in the branches of the portal vein seems widely spread among mammals, he says: "But only in individual species, as in the beasts of prey, do the valves possess great importance in connection with the circulation. In many species they are to be considered much more as rudimentary organs, which act either only in youth, as in men and perhaps the ape, and later in part or wholly disappear, or for the most part, as in the rabbit, are very imperfect."

Clinical Memoranda.

PUERILE GENITALIA.[1]

BY F. B. STEPHENSON, M.D., U. S. N.

ALTHOUGH the subject is mentioned by the ancients, from an examination of modern literature it appears doubtful that reliable data on cryptorchordia exist earlier than about 1720. Since then a great variety of cases have been reported, as given, for instance, by Godard ("La Cryptochordie," par Ernest Godard, Paris, 1857).

One or both testicles may continue in the abdomen, or be fixed more or less permanently in some portion of the passage to the bottom of the scrotum. Occurring normally at or near birth, complete descent has taken place as late as twenty-five (Godard) and thirty-five years of age (Mayer). When other signs of non-perfection exist, such as a weak voice, delicate structure, thin pubic growth, etc. (showing absence of masculine organism), virility is more than doubtful. The retained (undescended) seminal gland often undergoes a sort of fibrous transformation; or, various degenerations, as fatty, tuberculous, cancerous. An ill-located testis occasionally becomes troublesome, inflamed, from mechanical relations; it has been mistaken for an inguinal gland and for a hernia.

Dissection has shown that, sometimes, one of the pair is absolutely wanting, only rudimentary traces of the cord, etc., being found.

The testimony is rather conflicting as to whether double non-descent causes sterility. Godard, from microscopic examination, decides that where the testes remain in the abdomen procreation is impossible. John Hunter admitted that he had seen one case where they continued in the abdomen, and the person had all the passions and powers of a man. Two cases of undescended testicle are reported (*The Lancet*, June 16, 1877) where other signs of virility (as normal penis) existed, both having offspring. Another case, aged twenty-six, had both partially descended, with diminutive penis. After having seen his future marital companion the parts took on active growth: at twenty-eight years they were of normal size, and the man became a father (Curling, from Wilson).

When the sperm glands are in malposition outside of the abdomen, the ability to perform their office will be variously modified by the relations of surrounding structures, as to pressure chiefly. In any case, the prognosis must depend much upon other signs of adult physiology.

The preceding case resembles that now presented, which may be described as double inguino-scrotal cryptorchordia. The man is twenty-two years of age, generally well formed, of normal, healthy blood connection. The penis is of infantile size, though the patient states that erection has taken place, with the usual sensation on ejaculation, the organ then becoming about double its length when flaccid. Neither testis is in its natural place; the right can be easily pushed down, while the left may be felt near the pubic attachment of the scrotum; both are very small.

Another man, aged nineteen, recently seen, was well formed; had a very long trunk; penis unusually long and thick; right testicle larger than the average; left not apparent in the scrotum or elsewhere. He said that his brothers and sisters had children; that he did not know himself different from other boys; that he first noticed absence of testis when seven years of age. He appeared dull of intellect.

Dr. Marshall, in nearly 111,000 recruits, met with one case only where the two glands had not come down. He found, in 10,800 recruits, one double ectopy, eleven of single displacement (five right, six left.

Cryptorchids may be arranged in three classes:

(1) Those having neither desire nor power of sexual intercourse.

(2) Those having power of sexual intercourse, but incapable of fertilizing.

(3) Those having the desire and capacity for sexual intercourse, possessing normal semen, but who fear to marry because they think the testes useless, not being in the scrotum.

Little is known as to the cause. Some cases are hereditary. The dissection of one case showed no structural impediment to natural descent. Various anatomical abnormalities have been alleged without much logical basis. Lesions of adjacent parts (as gubernaculum) may hinder the usual course. Scarcely more can be assigned in explanation of origin than "incomplete development."

In this connection, it may be said that some observers consider feeble intellectual powers a consequence, or concomitant of such abnormality, but proof thereof has not been found in professional archives.

In regard to treatment, we find the account of one

[1] Read before the Boston Society for Medical Improvement, May 28, 1888.

case where the gland was forcibly removed from the canal and pushed to its natural place in the scrotum, but without success. No operative interference or manipulation, except to relieve pain from mechanical relation of parts, seems to have been reported as beneficial. Godard gives several cases similar to the first, now shown. In his book are a number of plates showing dissections.

According to the testimony as recorded, it is evidently unscientific, as well as unkind, to affirm as yet absolute sterility simply from cryptorchordia. A man's life may be made miserable by such a suspicion. However, the bearing of this condition on the question of marriage is worthy of serious consideration.

It may be of interest to add that these anomalies of testicular position have been observed in the dog and horse. Such displacements are analogous to conditions permanent in some of the lower animals. In this respect, the chimpanzee most resembles man. The upright posture is alleged to have causal influence on normal descent in the human anatomy.

A CASE OF APPENDICITIS, WITH AUTOPSY.

BY E. WARNER, M.D., WORCESTER, MASS.

ON the evening of July 19th, was summoned hastily to a patient, Mrs. W., aged fifty-nine, who was found to be moribund, extremities cold and pulseless, countenance indicative of great distress, very restless, complaining more particularly of pain in the right iliac region.

It was suspected to be a case of pericæcal trouble, and a case for which at an earlier moment operative treatment might have been of service. In fifteen minutes after arrival the patient was dead.

From friends the following history was obtained. On the 13th, the patient complained of feeling chilly. On the 14th, had decided chills and pain, followed by sweating. Tried to walk on the street, but had to return. On the 15th, was more comfortable. On the 16th, resumed the attempt to walk on the street; and though suffering considerable from pain all the time, took quite a long walk and attended to some business. The following night pain increased, and vomiting occurred. The night of the 17th, patient was described as "up and down all night with the pain." The 18th, was passed amidst great pain and suffering; and at ten P. M., a "spasm" was reported, lasting about half an hour. On the 19th, loose, watery stools occurred, having been previously constipated, and the patient would scream when the abdomen was rubbed.

She had complained at times for about four weeks of a little pain in the right iliac region. Had a previous attack, as the friends said, a year and a half before. There was an old umbilical hernia which had given the patient more or less trouble for several years.

Up to noon of the day she died she was under the care of a so-called Christian Scientist. At this time a clairvoyant was called, who years before had been the medical adviser, who had sufficient skill to detect the gravity of the case, and with conscientious regard for the care of the patient, advised to call a regular physician immediately. It was evening before the regular physician was summoned, and an hour later the writer saw her in consultation, with the result above described.

Autopsy the next day. On section, a layer of fat two inches or more in thickness over the abdomen was divided. The whole colon was greatly distended with gas, and from the right side chiefly, and coming from below, purulent fluid appeared at the opening: this being removed by sponge, and recent light lymph adhesions broken up, the appendix came prominently into view. It was attached by recent lymph adhesions to a coil of small intestine. On its anterior border and near its junction with the cæcum, appeared in full view a perforation large enough to admit the point of an ordinary director. It was thickened, dark colored, and about the size, in length and breadth, of a little finger. It contained some small fæcal masses, about the size of large white beans. The sigmoid flexure seemed to be held down by firm and old adhesions. Apparently deposits of lymph had formed partitions sufficient to prevent the general peritoneal cavity from becoming involved in peritonitis. Had the patient lived longer, it may be a question whether general peritonitis, or a localized abscess had been the result. The inflammation of the appendix had progressed so rapidly and its perforation had followed so promptly a partition wall of lymph of sufficient strength to retain the pus deposit had not been thrown out. The cæcum appeared entirely healthy, the vermiform appendix seemed the only part originally at fault.

This case seemed to throw light upon the conclusion reached by Dr. Thomas G. Morton when he says: "Recent pathological researches have demonstrated that, as a rule, in cases presenting the well-recognized characters of typhlitis the symptoms are almost invariably due to appendicitis. Exceedingly rare are the cases in which the cause resides in the cæcum. Pericæcal abscess may then, in most cases be said to mean disease of the appendix vermiformis."

Dr. H. H. Smith, of Philadelphia, says appendicitis is mostly met with before forty-five; perityphlitis is rare after forty. He quotes Bauer as stating that typhilitis is most common between sixteen and thirty-five. It will be noted that this patient was fifty-nine.

The umbilical hernia was of the small intestine, its anterior wall at one point having been protruded till it had assumed much the shape and size of a soft rubber nipple. Beyond this the part seemed normal. The great distress and rapid exhaustion of these cases is very striking. Symptoms so characteristic and formidable when once seen cannot be easily forgotten.

Christian Scientism seems to be quite popular in this city. A recent case, of newspaper notoriety, has just been reported, where the suffering of the patient was so severe as to arrest the attention of the near neighbors, and in which the resulting death was returned as due "to change of life," has this very morning, August 22d, in our local papers a note of apology from the near relatives, stating that the treatment was satisfactory to them and according to the wishes of the patient. How horrible must be the sufferings of a patient under appendicitis and receiving only the treatment of a Christian Scientist!

First Undertaker: "Well, we can't complain much of dulness of business.

Second Undertaker: No; it is true we have no cholera or yellow fever this summer, but there is a very encouraging epidemic of the mind-cure in places. — *Life.*

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

T. F. SHERMAN, M.D., SECRETARY.

Regular meeting, Monday, June 4th, at the Medical Library, 19 Boylston Place, Dr. E. N. Whittier, in the chair.

Dr. F. H. Davenport read a paper on

SOME GYNÆCOLOGICAL CASES TREATED BY ELECTRICITY.[1]

Dr. Francis Minot said he was especially interested in the cases of subinvolution of the uterus reported by the reader, as his experience in the treatment of such cases by electricity had been limited. He had frequently found electricity of value in cases of amenorrhœa, though it was often difficult to say how much credit should be given to the electricity *per se*, and how much to the moral effects of the treatment on the patient, especially in cases of delayed menstruation where pregnancy was feared. In other cases of amenorrhœa it has a tonic effect. He has often found it of service in amenorrhœa produced by a sea voyage, one electrode being applied to the back, and the other over the pubic region or over the ovaries.

Dr. Minot asked the reader if he had treated fibroids of the uterus by electricity, and if it controlled the hæmorrhage in those cases.

Dr. Davenport replied that he had not, but had seen cases of fibroids treated by electrolysis with good result, the positive pole in the uterus, with the negative pole outside.

Dr. E. O. Otis said: I want to show this patient, upon whom I made a

PERMANENT OPENING FOR EMPYEMA

in February last. The case is, briefly, as follows:

This woman lived in an unhealthy tenement, was much below par from overwork and her unhealthy surroundings, and was taken sick on the 9th of January last with symptoms of trouble in her left chest. It was one of those obscure cases in which the difficulties of making a definite diagnosis were great. One day the evidence seemed to be in favor of pneumonia, the next of a pleuritic effusion. On the 22d of January I felt tolerably sure of an effusion, and aspirated. I obtained serum. I aspirated again on the 29th of January, and again on the 5th of February, obtaining pus. I made a permanent opening, February 7th, between the eighth and ninth rib, and inserted a drainage-tube of moderately large calibre. I think I struck the diaphragm, and, in consequence, was not able to obtain good drainage. After trying different drainage-tubes, I found I could do the best without any by inserting the glass tube of the syringe directly into the opening and washing out the cavity in this way, as I was obliged to do daily for a while, in order to keep the cavity clean. I used various antiseptic fluids, but found a bichloride solution of 1 to 8,000 strength the best. She had constant afternoon fever until about the middle of April. On May 1st the discharge ceased, and on May 8th the wound was healed. She gained in flesh rapidly, gaining eight pounds in sixteen days. She has fair resonance and respiration on the affected side, and is in good general condition, as you see. From the date I made the permanent opening until all discharge ceased was eighty-three days. Knowing what I do now of the admirable effects of creoline, I should use a solution of this for washing purposes in a future case.

Dr. Minot asked why the opening was made so low.

Dr. Otis replied that he had obtained pus through the aspirating needle as low, and had made the permanent opening in the same place, using the aspirating needle as a guide.

[1] See page 397 of the Journal.

NEW YORK STATE MEDICAL ASSOCIATION.

Fifth annual meeting, held at the Hotel Brunswick, New York, October 9, 10, and 11, 1888.

THIRD DAY. — AFTERNOON SESSION.

DISCUSSION ON PUERPERAL SEPTICÆMIA.

The discussion was opened by Carlton C. Frederick, M.D., of Erie County, who read a paper, in which he propounded the questions which follow. In the course of it he said that more cases occurred in primiparæ than in pluriparæ, and that the danger of infection in any case was in direct proportion to the avenues of approach left open for the invasion of sepsis. The importance of prophylaxis was, therefore, evident, and the strictest antiseptic precautions should be employed in every case of labor. Among the measures that he advocated was the use of a vaginal douche of bichloride solution (1 to 3,000) before delivery. The placenta should always be removed with the patient on her back, in order to prevent the ingress of air, which was likely to take place if she were in Sims's position. After delivery the perineum should be examined, and sutures applied if there was any rupture. If for any reason it was necessary to introduce the hand into the uterus, an intra-uterine injection of bichloride solution (1 to 4,000) should subsequently be employed. He advocated the use of the antiseptic pad, and said that vaginal injections were unnecessary. When the bowels or bladder were evacuated the patient should be raised to the upright position, in order to drain the uterus and vagina. He said that he felt that the necessity of complete antisepsis as a means of prophylaxis was not yet sufficiently understood by the rank and file of the profession.

As regards the prognosis of puerperal fever, the purely septic forms were the most dangerous, unless the condition was promptly and thoroughly treated. When septic germs had once gained entrance into the blood and the lymphatics they were beyond the reach of the physician; but further infection could generally be prevented, and if the patient's strength could be kept up the hope might be entertained that the poison would be eliminated from the system. The point of production and the point of absorption was when there was a solution of continuity in the tissues, and putrid lochia were a potent cause of infection.

When septicæmia declared itself, vaginal injections of bichloride solution (1 to 2,000) should be employed at intervals of from three to six hours, according to the urgency of the symptoms. After the use of the douche the patient should be required to sit upright, to drain the parts. All necrosed patches in the genital canal should be touched with equal parts of the solution of the persulphate of iron and the compound

tincture of iodine, as recommended by Lusk, and if there were any diphtheritic patches the chloride of zinc should be employed, as advocated by Garrigues. It was probable that the intra-uterine douche had been resorted to too frequently, and that the real benefit in most of the cases where it was used resulted from vaginal irrigation. Among the dangers likely to arise from this practice was one that had been overlooked; namely, that of conveying septic material from the vagina into the cavity of the uterus. If the intra-uterine douche was deemed necessary the patient should be placed in the lithotomy position, and from one to three pints of bichloride solution (1 to 4,000) carefully injected. Afterwards the uterus should be squeezed dry, a pencil of iodoform inserted into its cavity, and ergot administered to insure contraction. In controlling high temperature, antipyrine, or, preferably, antifebrin, was often of service.

QUESTION I. — What facts can be cited in support of the doctrine that the puerperal febrile diseases owe their origin to the action of micro-organisms?

Discussed by HERMANN M. BIGGS, M.D., of New York County.

He referred to nature's safeguards against infection, and said that the natural resistance of the tissues must first be overcome before septic germs could obtain an entrance. In the normal parturient woman the lochial discharge and the abundant secretions of the parts continually protected the wounded surfaces. The uterus was also kept tightly closed up by its own contractions, and the epithelium of its cavity protected its orifices with an impenetrable shield. If, however, anything occurred to diminish the quantity of the lochia; if the uterus did not contract properly; if the vital resistance of the tissues were reduced by depressing influences of any kind; or if portions of membrane or blood-clots were retained in the uterus; and if, under any of these circumstances, microbes were introduced, it was evident that the most favorable conditions were present for the development of puerperal septicæmia.

With these points in view, it was easy to understand how the use of antiseptic precautions was so efficient in preventing this condition. If, in the first place, an antiseptic vaginal douche were employed during and immediately after labor, and if, in the second place, an antiseptic dressing were kept applied after delivery, infection was much less likely to occur than if these measures were not resorted to, and if it did occur it was apt to do so at a later period, when a better opportunity was afforded for counteracting its effects. The different conditions met with in different cases explained the various forms of puerperal septicæmia met with. After death, pyogenic organisms had been met with in the milk-glands, in the lymphatics, and in various organs throughout the body, and it had been demonstrated that they were eliminated during life by the kidneys and other emunctories. The streptococcus pyogenes was found in a large number of cases, and it was probable that this was identical with the streptococcus of erysipelas. The next most common bacillus met with was the staphylococcus, the ordinary microbe of suppuration. The puerperal febrile diseases were, therefore, a class of affections closely allied to infectious surgical diseases. The bacilli of the latter were known to be capable of producing all the conditions met with in puerperal septicæmia. The abolition of the latter from maternity hospitals constituted one of the most remarkable chapters in the history of bacteriology, and hence the conclusion could not be avoided that these diseases were of bacterial origin.

QUESTION II. — Is there a specific febrile disease peculiar to the puerperal woman, or are the various forms of puerperal fever the result of septic or putrid infection similar to or identical with that familiar to surgeons as septicæmia? What etiological relations exist between the zymotic diseases and some forms of puerperal febrile diseases, and in what manner are the zymotics modified by implantation upon the puerperal state?

Discussed by EVERARD D. FERGUSON, M.D., of Rensselaer County, and S. B. WYLIE MCLEOD, of New York County.

The first part of this question, Dr. Ferguson said, did not admit of a categorical answer, but in the present state of knowledge the theory that puerperal fever is a specific disease was no longer tenable. At the last important discussion on the subject in this country, that before the New York Academy of Medicine in the winter of 1883 and 1884, the only participant who advocated the specific character of the disease was Dr. Fordyce Barker. When fever occurred *ante-partum*, as was undoubtedly the case in a few rare instances, it was more reasonable to suppose that it was due to some of the causes which might give rise to pyrexia at any time, rather than to a specific puerperal fever without any anatomical basis. As a rule there was no septic absorption without solution or continuity of tissue, and blood-clots allowed to remain in the genital tract were especially liable to cause such absorption.

As regards the second part of the question, it could be shown that pregnancy did not afford immunity from any of the zymotic diseases. It was necessary to distinguish between those cases in which the zymotic disease complicated the puerperal fever and those in which the zymotic infection gave rise to the puerperal fever. With regard to diphtheria he said he wished to protest against the assumption that every case of membraneous exudation was one of true diphtheria. The zymotic diseases were apt to be more or less modified by implantation on the puerperal state, and the mortality was often increased, especially when pelvic inflammation was present. The diminution of red corpuscles and the increase of fibrin in the blood resulting from pregnancy might, perhaps, explain to some extent the greater severity of the zymotics, as a rule, in parturient women. In cholera, however, the mortality was apparently not increased in pregnant women. Small-pox was noted for its mortality in this class, the death-rate averaging from twenty to forty per cent. It frequently caused abortion, which was apt to be followed by the death of the patient; and the same was true of scarlatina and measles. The relation between erysipelas and puerperal fever had long been well known. This disease was not so fatal, however, if care were taken to avoid infection of the genital tract.

Dr. McLeod said that in the light of our present knowledge very few would claim that puerperal fever is a specific disease with always the same cause. The missing link in Churchill's tables which had formerly been so often referred to, was supplied by bacteriology. It was a recognized fact that certain cases of puerperal febrile disease occurred in which there was no sepsis; but it was also well known that fever of

any kind had a bad effect upon open wounds. It could not be doubted that the zymotic diseases sometimes caused puerperal septicæmia. In general it might be stated that puerperal fever was a complex disease, depending on a variety of causes, but dependent, as a rule, on surgical septicæmia. The test of treatment, as shown by the remarkable success of antiseptics, conclusively proved this. The conclusions at which he had arrived were as follows:

(1) It is the wise course to acknowledge the vast etiological importance of septic infection.

(2) It is proper to acknowledge, also, that some cases are of zymotic origin.

(3) That practitioner is best qualified to treat puerperal fever who, in addition to the judicious use of antiseptics, is prepared to employ quinine, iron, iodine, and other appropriate remedies, in case the disease may be of zymotic origin.

Question III. — What conditions of the woman predispose to the development of puerperal septicæmia? To what extent are the accidents of childbirth, together with the manipulations of the accoucheur, to be considered as etiological factors in puerperal infection? Are there any antiseptic measures before, at, or after labor, under any and all conditions or complications, that may be relied upon as prophylactic to puerperal septicæmia?

Discussed by Frank W. Ross, M.D., of Chemung County, and John Shrady, M.D., of New York County.

Dr. Ross spoke first of the causative agency of a predisposition or vice of constitution in the puerperal woman, and said that among the important conditions of this kind were the zymotic diseases, disease of the lungs, kidneys or bowels, gonorrhœa and cystitis. To be forewarned was to be forearmed, and the special means for prophylaxis to be employed would depend on the peculiar condition of the patient. The accidents of childbirth and all abnormal conditions during the same, strongly predisposed to septicæmia. The bruising of the parts of the head of the child, the accoucheur's hand, or the use of instruments were liable to be followed by it, and a slight tear of the perineum left to itself was more dangerous than a larger one treated with antiseptic precautions. No iron-bound rules could be laid down for prophylactic treatment, but the observance of certain measures, with due regard to the condition and surroundings of the patient, would, in general, be of service. In the first place, the woman should be placed in the most perfect health attainable, both general and local, before her confinement. At the time of labor she should have plenty of pure air, and all things about her should be scrupulously clean, efficient antiseptic solutions being employed to secure this end. If the perineum were ruptured it should be either sutured or antiseptic protection afforded the parts. Antiseptic injections might be judiciously used, if called for, before, during and after labor.

Dr. Shrady said that one of the most important predisposing conditions was a lowered vital tone. This view was supported by the bacterial origin hypothesis, because it was well known that healthy tissue constituted the great barrier against microbic infection. The primary channel of sepsis was the genital tract, and experience had taught the advisability of making infrequent vaginal examinations. The difference between purulent and putrid infection was to be carefully borne in mind, and the latter was the more rapid and dangerous of the two.

Question IV. — Are the lesions resulting from puerperal infection always the same? If various lesions result, can an accurate differential diagnosis be made between them, based alone upon the history and symptoms?

This question was to have been discussed by Dr. Wm. H. Robb, of Montgomery County, but, in his absence, was passed over.

Question V. — What is the pathology of each of the several forms of puerperal septicæmia? What conditions or circumstances incident to puerperal septicæmia, and what forms of the disease tend to render it fatal?

Discussed by Frank Grauer, M.D., of New York County.

In the course of his remarks he described two forms of inflammation of the vagina, the catarrhal and the diphtheritic. When the inflammation extended from the vagina to the uterus, it might pass on to the tubes, producing salpingitis, or through the fimbriated extremities of the latter, producing peritonitis. He described particularly the lesions of parametritis and pelvic peritonitis, associated with lymphangitis, and the condition where diffuse peritonitis supervened. Having referred to the secondary lesions sometimes met with in the lungs, heart, kidneys, meninges, and other parts, he stated that the lesions in general resembled those met with in the ordinary forms of septicæmia.

Question VI. — What plan of antiseptic treatment can be employed with a large degree of success in each of the several forms of the disease? Does every rise of temperature above 100° F. in the puerperal woman constitute an indication for immediate resort to irrigation? When should irrigation be intra-vaginal, and when intra-uterine? When irrigation is employed, how often should it be done, and when should it be discontinued? What hygienic, medicinal, and dietetic treatment is to be used in addition to the local antiseptic measures? To what extent should alcoholic stimulants and antipyretics be used?

Discussed by William T. Lusk, M.D., of New York County, and Rollin L. Banta, of Erie County.

Dr. Lusk said that in the midwifery of the future there was reason to believe that there would be no occasion whatever to discuss the treatment of puerperal septicæmia. His own observation had led him to hold the opinion that this condition ought never to follow a properly conducted labor. In the Emergency Hospital in New York, where the number of confinements averaged 220 annually, the mortality from puerperal septicæmia had been reduced to *nil*, and it was actually the case at the present day that the women confined in lying-in asylums fared better as regards this affection than private patients surrounded by all the aids that wealth can command. The very fact that a place was given to such a discussion as this on the programme of the Association showed, indeed, that the necessity and efficacy of preventive treatment were not yet as fully appreciated by the profession at large as they ought to be; and he could not but believe that one reason why this was so was because that when antiseptic prophylaxis first came in vogue it was taught that the removal of the carpet, upholstery, etc., from the chamber, and other such extreme measures, were required, and the difficulty of carrying out such a plan of procedure, which was altogether unneces-

sary, had proved a stumbling-block to many practitioners.

In the first place, both the physician and the nurse should understand the necessity of surgical cleanliness, and soap and water and corrosive sublimate were the means by which this could best be obtained. The hands and forearms should be washed with bichloride solution, just as if laparotomy were to be performed, and the patient's genitals, abdomen, and thighs should also be bathed with it. Vaginal injections with the bichloride solution during labor were a valuable safeguard against self-infection. All unnecessary manipulations, such as attempts to dilate the cervix with the fingers, should be avoided. The complete removal of all the membranes should be carefully looked to in the third stage of labor, and Dr. Lusk said that, in order to secure this, he always employed a strong light, so that he could readily see what he was doing. If it was necessary at any time to introduce the hand into the uterus, the cavity should be afterwards washed out with a solution of carbolic acid.

To prevent germs from entering the tissues to a dangerous extent, nothing would seem at first sight so efficient as irrigation; but uterine irrigation was not devoid of risk, and this method of procedure really left out of account the great bulk of puerperal inflammations. Experience had shown that if the uterine douche were employed regularly at four hours' intervals the mortality would be considerable. It was a point worthy of note that a rise of temperature did not constitute at all the indication for a resort to uterine irrigation. The true indication was a large, flabby uterus with retained membranes, portions of the placenta, or blood-clots.

In using the uterine douche a glass tube was preferable, and carbolic acid solutions was the most desirable fluid for the purpose. It should be preceded by a vaginal douche, and the quantity of fluid employed should not be large, never exceeding two quarts. The stream should be continuous, and not interrupted. It was important that a free exit for the fluid should be secured, and after the douche had been finished pressure should be made upon the uterus to facilitate contraction and the expulsion of any of the solution that might remain in the organ. He had found it a good plan to leave a pencil containing a drachm and a half of iodoform in the cavity of the uterus. The mistake was often made of resorting to the uterine douche too frequently. It was his practice to give a second douche at the end of twelve hours, if necessary, but a third was rarely needed. Dr. Lusk stated that he still had faith in the efficacy of the vaginal douche in almost all the varieties of puerperal fever, as it certainly promoted uterine contraction, and was generally very agreeable to the patient.

In every case of increased temperature after parturition, the first thing to do was to make a careful examination of the vulva and vagina, and if ulcerations were found to apply caustic. The use of ice-bags over the pelvic region was generally of service. The chief danger in puerperal septicæmia was from weakness of the heart's action, and this was to be counteracted by alcoholic stimulus, abundant liquid nourishment, and such agents as strophanthus. In all cases of fever following parturition, suitable food and alcohol were indispensable. The most careful attention to the hygienic surroundings of the patient was, of course, called for. In the severest cases the ice-coil was undoubtedly useful, and Runge had recently reported very favorable results from the employment of tepid baths in lymphatic septicæmia. These results were the more remarkable from the fact that this was the most fatal variety of puerperal fever, and the method was certainly worth resorting to.

Dr. Banta spoke of the importance of employing every possible precaution to exclude septic material from the parturient patient's system. After trying various other agents, he had returned to the use of bichloride of mercury as the most satisfactory antiseptic. He employed it in a weak solution (1 to 4,000, and often as weak as 1 to 10,000). If injections were to do any good, the benefit would be evident at once. The curette was often of much service in removing *débris* from the uterus, but nothing could take the place of the educated hand of the accoucheur. The indication was to remove all infectious material from the genital canal, and, if it could not all be removed, to thoroughly disinfect what remained. If, after giving vaginal douches for from twenty-four to forty-eight hours, no relief was afforded, intra-uterine irrigation should be resorted to; and if, after using this for a day or two, in addition to the curette, no benefit followed, it was best to give up injections entirely, as the trouble could not thus be reached.

VERMONT STATE MEDICAL SOCIETY.

SEVENTY-FIFTH annual meeting, held at State House, Montpelier, October 11th and 12th. *President*, Edward R. Campbell, M.D., Bellows Falls; *Secretary*, D. C. Hawley, M.D., Burlington.

OCTOBER 11TH.—FORENOON SESSION.

The Society was called to order at 10 A.M. by the President. Prayer was offered by Rev. George T. Raymond, of Montpelier.

DR. C. J. ALLEN, of Waitsfield, presented a paper on

ACUTE YELLOW ATROPHY OF THE LIVER.

Dr. Allen, after giving a brief résume of the anatomy of the liver, said that the starting-point of inflammatory action in this disease, instead of being in the connective tissue, as it is in cirrhosis is diffuse, spending its greatest force on the hepatic cells of the lobules. These shortly undergo a fatty degeneration and softening, so that if the liver be removed it will not retain its form when laid down, but will flatten out.

The bile ducts become obstructed by the softened epithelial cells, and what bile is secreted is carried by absorption into the system, and gives rise to jaundice, which fades only when the bile is no longer secreted. After about nine days the area of hepatic dulness diminishes. This symptom is said to be more nearly pathognomonic than any other. The prognosis is fatal in a well-marked case.

In the majority of cases the graver symptoms are preceded by milder prodromes. These prodromal symptoms, consisting of loss of appetite, nausea, vomiting, bitter taste in the mouth, headache and general malaise, will persist for a period varying from a week to several months.

A persistent dilatation of the pupils will be noticed at some period, and jaundice in some degree is sure to

appear. The liver is reduced to about one-third its natural size.

Increased headache, intense insomnia, extreme restlessness, paralysis of sphincters, jactitation, possibly convulsions, wild delirium, coma, death, and the scene is closed.

The temperature ranges from a slight rise to 105° and 106°, the pulse keeping pace with the temperature. Hæmorrhage from some part of alimentary canal is common. Nearly all the organs undergo more or less change.

But little can be done in the way of treatment. Sodium phosphate, quinine, arsenic and astringents for the hæmorrhages are the drugs most employed after the graver symptoms appear.

Dr. Allen gave the history of a case which came under his care during the present year, in which he was assisted in the diagnosis by Dr. Henry Janes, of Waterbury, a prominent member of this Society.

The subject was briefly discussed by Dr. F. W. Goodall, of Bennington, Dr. O. W. Sherwin, of Woodstock, and Dr. Wm. R. White, of Providence, R. I. Dr. White said one or two cases of acute yellow atrophy of liver had been reported in the meetings of the Rhode Island Medical Society.

The second paper,

NOTES ON ALBUMINURIA,

was read by A. B. Bisbee, M.D., of Montpelier.

He said that it has long been known that some apparently healthy persons may pass albuminous urine continuously for many years without developing symptoms of renal disease, and that in a still larger number of persons a temporary albuminuria may be excited by slight causes, but these facts seem to have been regarded, in the past, as of very little practical value, and to have lessened in no way the importance usually attached by physicians to this symptom as ordinarily met with in practice.

Ever since Richard Bright drew attention to the relationship existing between albuminuria and the kidney affections which are now associated with his name, the idea has very largely obtained that albumen in the urine is an almost infallible indication of serious organic disease of these organs, and the possibility of its occurrence unassociated with such diseases, until recently, has not been seriously considered.

In the nomenclature adopted by the Royal College of Physicians, the two terms albuminuria and Bright's disease are given as synonymous, and the common practice of hinging a diagnosis of kidney disease on the presence of this one symptom alone has generally been considered warrantable.

With the advent of a more thorough clinical study of the urine, it has become apparent that albumen in the urine is not always evidence of pathological changes in the kidneys, nor the "signal for an alarming prognosis."

While albuminuria may be a symptom of Bright's disease, it is not essential to it, and some cases of chronic diffuse nephritis may pass through their entire course to a fatal termination without the presence of albumen in the urine at any time.

Albuminuria is sometimes produced by pathological changes in other organs of the body; and, again, albumen sufficient in quantity to be detected by the ordinary tests frequently appears in the urine under conditions compatible with perfect health. In such cases the most striking feature is the intermittent character of the albuminuria.

There is a period in every day when no albumen can be detected. In some cases it appears only after exercise, in others only after meals. In most cases the urine passed on rising is free from albumen, while later in the day it appears in varying amounts. Albuminuria without kidney lesion is called cyclic abuminuria. In this form of disease the urine and urea in twenty-four hours is normal. In all forms of Bright's disease the amount of urea is lessened and, as a rule, the quantity of urine is diminished. In simple albuminuria there is no cardiac hypertrophy, no increased arterial tension, no dropsical effusion, no changes in the retina.

What is the significance of cyclic albuminuria? Is it entirely non-dangerous, or is it the initial stage of serious kidney disease?

At present it seems impossible to answer this question; but there can be no doubt that some of the cases eventuate in kidney disease. Many physicians believe that the repeated passage of albumen through the kidneys induces structural changes in these organs, and that its presence in any amount is a dangerous symptom. Others, and perhaps the majority of observers, hold that, while some cases terminate in kidney disease, the majority do not so terminate, and cases are cited where albuminuria is known to have persisted many years with no bad results.

Dr. H. D. Holton, of Brattleboro, and Dr. O. W. Sherwin, of Woodstock, thought albumen in urine for several continuous days a serious symptom.

Dr. C. S. Caverly, of Rutland, reported a case of cyclic albuminuria which occurred in his practice four years ago, and the patient is well to-day.

Dr. Goodall said there was a nervous element in many cases of cyclic albuminuria — that it might be called a neurotic disease.

Dr. Nimblet, of Monkton, reported the case of a man who had a large quantity of albumen — twenty-five to fifty per cent. — in urine, thirty-four years ago, and who died a year or two ago of old age.

The subject was further discussed by Dr. C. C. Perry, of Bethel, and Dr. C. J. Allen.

Dr. C. P. Frost, of Hanover, N. H., would not recommend patients with cyclic albuminuria for life insurance.

Dr. E. F. Upham, of West Randolph, thought the kidneys often came to the relief of other organs — as the digestive — and said a transient albuminuria might not be serious.

Adjourned.

AFTERNOON SESSION.

Dr. George Dunsmore, of St. Albans, presented a paper on

SEPSIS IN OBSTETRICS.

He said that puerperal fever was caused by the presence of microbes upon a lacerated surface of cervix or vagina. That prophylaxis was incumbent upon the physician in every case. He recommended cleanliness, and asepsis by the use of bichloride solutions for the hands and for vaginal douches and uterine douches, if the hand had been put into the uterus.

Dr. H. R. Wilder, of Swanton, said the microbe was likely to find its way into the genital tract in any case and produce puerperal fever. He would use douches in every case.

DR. FROST thought decomposition due to micro-organisms, and their destruction to end danger from puerperal fever. He advocated cleanliness, and thought that would answer in most cases.

DR. UPHAM said he questioned whether microbes were the cause or the consequence of puerperal septicæmia.

DR. WM. R. WHITE said that in case a physician put his hand into the uterus, he should first render it aseptic, if possible, or use antiseptic douches afterwards.

DR. C. S. CAVERLY read an exhaustive paper upon

THE PRESENT STATUS OF THE GERM THEORY.

DR. O. W. SHERWIN presented a paper on

THE LOCALIZATION OF FUNCTION IN THE BRAIN.

He exhibited several diagrams showing the brain and its envelopes, and demonstrated the manner in which lesions producing paralysis, anæsthesia, aphasia, etc., could be located.

At 4.30 P. M. the Society adjourned to the House of Representatives to listen to the annual address by the President, DR. EDWARD R. CAMPBELL. A large number of the members of both houses of the Legislature were present by special invitation.

DR. CAMPBELL discussed the subject

WHAT CONSTITUTES IRREGULAR PRACTICE?

He said that medicine is a liberal profession, subject to no bonds except those of science and truth, and if at any time any new remedy is discovered, or system cure arises, no matter how great or how humble its origin, it is our duty and privilege, if there be one grain of truth or progress in it, to utilize it in our endeavor to alleviate human suffering.

In the matter of consultations, he said we should always consider it a duty to assist in relieving human suffering.

Dr. Campbell spoke upon the subject of expert testimony in the courts. He cited many writers to show that medical testimony was held in low esteem by bench and bar.

What has brought medical testimony into such seemingly merited disrepute, while in other respects the medical profession is regarded with honor, and is above suspicion? One reason is the fact that the family physician allows himself to be brought into sympathy with his patient's cause, and this sympathy and his personal interest in his patient allows his judgment to become biased. Another reason is the fact that the physician goes upon the witness stand without studying the details of the case. While cream of "bench and bar" have severely criticized our profession in the matter of expert testimony, yet they are no better than the humblest of us; for how else can the famous eight to seven decision of the electoral commission be explained?

Here grave and reverend judges of the Supreme Court decided questions pertaining to the highest office the sun shines on — the presidency of the United States — according to their political prejudices. No matter whether right or wrong, the fact remains that on questions of law their decisions were in the direction of their political prejudices.

With such examples before us, can we blame the physician for being at times prejudiced in his patient's favor?

How shall we eliminate this element from our courts of justice, and have the medical expert go, as the judge goes, bound to deal impartially with both sides.

Dr. Campbell advocated a State law allowing the judge, at his discretion, or at the request of either side, to summon one or more medical experts, whose fees should be provided for by law. If the practitioner was summoned by the court with a full understanding that he was to act, as it were, as medical instructor to judge and jury, he would be more fully prepared to give a complete and impartial medical opinion in the case.

Dr. F. W. Draper, of Boston, a prominent authority in medico-legal literature, says: "It is plain that the only way out of the difficulty is through legislation. Statutory law must prescribe the modus operandi, and forbid practice contrary thereto, and establish legal provisions which shall be clear and just for the guidance of all concerned."

EVENING SESSION.

DR. A. C. BAILEY, of West Randolph, presented his paper on

THE ANATOMY, PHYSIOLOGY AND THERAPEUTICS OF THE PHARYNX.

He said that among the whole list of diseases that ever infected the human race in this particular part of the country, none more frequently came under the observation of the general practitioner than inflammation of the pharynx, or some of the openings communicating with it. From repeated attacks it is liable to become chronic, and to cause, by continuity of tissue, a catarrhal state of the eustachian tubes, larynx, œsophagus, posterior nares and bronchial tubes, whereby the normal tone of the whole system is lowered.

Dr. Bailey gave in detail the anatomy and physiology of the pharynx, after which he said the first essential in the successful treatment of diseases of the pharynx, or any of the passages or cavities leading therefrom is cleanliness. Cleanliness alone is sufficient to bring about a cure, at times, without the assistance of remedies, and especially is this the case when the inflammatory process is kept up by constant exposure to an atmosphere loaded with irritating substances in such quantities as to overwhelm the normal functions of the ciliæ of the ciliated epithelium, and so interfere with the action of the glands. Most cases are of long duration, and inflammatory changes have taken place, giving rise to hypertrophies, ulcerations, etc. The most common but not the most effective way of cleansing the posterior oral cavity is by gargling. When we desire to reach the posterior surface of the pharynx gargling is of no benefit whatever.

Dr. Bailey condemned the method of drawing the medicine up from a tumbler, or of snuffing it from the palm of the hand. The douche and the atomizer are to be greatly preferred, the atomizer being best of all. The agents employed in treating the pharynx or nasal passages should be such as, if accidentally swallowed, would cause no deleterious effects.

For ordinary cases but a few agents are necessary. The bicarbonate, biborate and chloride of sodium and the chloride of ammonium, in the strength of four to eight grains to the ounce, are all effectual, all of them being slightly astringent, mildly stimulating, and aseptic. Bromide of potassium, fifteen grains to the ounce, is valuable when slight anæsthesia is desired. In sim-

ple congestion mild stimulation with chloride of ammonium is beneficial. If there is hypertrophy, and stimulation is contraindicated, bicarb. sodium would come in play on account of its non-irritating character.

In cases with offensive discharges use biborate of soda, or permanganate potass., gr. i to ounce; carbolic acid, gr. i to ounce; or salicylate of soda, gr. v to the ounce. So far as internal medication goes, there are usually special indications in each individual case.

Dr. Henry Boynton, of Woodstock, spoke upon

HYSTERIA

as follows: Hysteria is responsible for a large part of the suffering of female patients and of some male patients. We should study hysteria from its mental side, as well as from its physical. Hysterical symptoms should, if it were possible, be studied in that borderland between the mind and the body. Hysteria, in the majority of cases, is due to a loss of will-power. If this is so, the first step in rational treatment is to help the patient get control of herself. A solution of the subject on this basis is difficult. Get the confidence of your patient, but never let her know that you have any sympathy with her difficulty.

Dr. Boynton gave history of several interesting cases, all of which were cured at once on this basis:

Conclusions: (1) Hysteria is due to loss of will-power. (2) It is not amenable to treatment with drugs. (3) Our first duty is to try to help patients to come to themselves — to restore, if possible, lost will-power.

Dr. J. H. Hamilton, of Richford, presented the next paper, upon

DIPHTHERIA: ITS HISTORY, CAUSE, AND PREVENTION.

After speaking at length upon the history and cause of the disease, he said diphtheria is a preventable disease. If proper precautions are early adopted, it may be limited to the first cases; therefore, when it gets away from primary cases, and communities are thereby made to suffer, some one is to blame. The most effectual method of prevention is by quarantine, the isolation and disinfection of patients, and the disinfection of apartments where the disease has occurred.

To illustrate the good results from this course, the speaker gave the following statistics from his own experience: In the town of Montgomery, from one outbreak there were 150 cases and 30 deaths, no attempt having been made to prevent its spread. In Richford there were 7 outbreaks, 17 cases, and 3 deaths — this the result of proper and prompt precautionary measures.

Adjourned to 9 A. M.

SECOND DAY, OCTOBER 12TH.

Dr. F. T. Kidder, of Woodstock, presented a valuable paper on

CEREBRO-SPINAL MENINGITIS.

Dr. L. M. Bingham, of Burlington, presented a paper on

A REPORT OF A CASE OF TAIT'S OPERATION FOR REMOVAL OF OVARIES.

Miss M. M., seamstress and fancy needle-worker. Never menstruated until twenty-two years of age. Was never regular, menstruation occurring once in from three to eight months. In two instances the interval was one year. She began having pulmonary hæmorrhages at fifteen years of age, and they continued at intervals of from one to three months up to time of operation. These hæmorrhages usually just preceded menstruation. For last six years, every menstrual flow has been attended with severe local and constitutional symptoms. Local symptoms were pain in pelvis, particularly on left side, tympanites, extreme tenderness, retention of urine, with occasional attacks of suppression, accompanied by albuminuria. Constitutional symptoms were vomiting, loss of appetite, elevation of temperature, coated tongue, and hysterical attacks. Cataleptic and hysterical attacks were frequent and severe. During last year previous to the operation she was confined to bed three-fourths of the time. She became greatly emaciated, and slept but little.

The operation was done on May 31, 1888, at Mary Fletcher Hospital. Both ovaries were removed. They were of large size, but there were no adhesions. Both contained a large number of cysts, in size from a pea to a filbert. Case has progressed favorably. Patient has gained in flesh, and is able to walk about without pain or discomfort. Says she feels better than in ten years. Has had one slight attack of hysteria since operation.

For past two months she has been free from any return of the previous troublesome symptoms. Is gradually resuming her needlework, and looks forward with pleasure to a life of better health than she has ever known. Formerly her life was one of despondency, with suicidal tendencies.

Dr. C. P. Frost, of Hanover, N. H., was elected an honorary member of the Society.

The Constitution and By-Laws were amended, making the place of holding annual meeting in off year of Legislature in Burlington, instead of Montpelier, as at present.

Officers for the coming year were elected as follows: *President*, J. M. Clarke, Burlington; *Vice-President*, F. W. Goodall, Bennington; *Secretary*, D. C. Hawley, Burlington; *Treasurer*, D. G. Kemp, Montpelier; *Auditor*, C. E. Chandler, Montpelier; *Executive Committee*, J. M. Clarke, D. C. Hawley, F. R. Stoddard; *Publication Committee*, A. B. Bisbee, D. G. Kemp, C. M. Chandler; *License Censors*, C. S. Caverly, J. D. Brewster, J. N. Jenne.

The semi-annual meeting in 1889 will be held in Brattleboro, on the last Thursday and Friday in June.

Recent Literature.

Disinfection and Disinfectants; their Application and Use in the Prevention and Treatment of Disease, and in Public and Private Sanitation. By the Committee on Disinfectants, appointed by the American Public Health Association. Concord, N. H., 1888. pp. 266.

In no department of public hygiene has more rapid progress been made during the past ten years than in that of disinfection. The American Public Health Association, realizing the importance of the subject, appointed a Committee in 1884 which, after three years of diligent investigation, has embodied the results of its inquiries in this valuable publication. The character of the experts selected for this work, of whom Dr.

George M. Sternberg, U. S. A., is chairman, is a sufficient guarantee of the value of their report.

The book is not a mere compilation of the results of observation of various authorities, American and foreign. It contains the results of a great number of carefully conducted experiments, made with reference to the determination of the germicide power of different disinfectants. Many of these experiments were made by Dr. Meade Bolton, whose training in the laboratories of Flügge, of Gottingen, and Koch, of Berlin, had especially qualified him for such work.

Full descriptions, with illustrations, are also given of the principal forms of apparatus used for disinfection by means of moist and dry heat.

A thorough acquaintance with the principles of preventive medicine is by no means the least duty of every physician, and in this work the physician in general practice, and especially the health officer, will find an invaluable companion.

A Practical Text-Book of the Diseases of Women. By ARTHUR H. N. LEWERS, M.D., of London, with illustrations. Philadelphia: P. Blakiston, Son & Co. 1888.

This work is a condensed manual of gynæcology, and is intended to be of especial value to the beginner. Its advantages are that, while the author has aimed to be concise, he has also kept steadily in view the practical side of the subject, and has as far as possible omitted what is theoretical, or not proven. His style is clear and his arrangement good, and the portions treating of the differential diagnosis are, considering the size of the book, unusually well treated.

The disadvantages are those which are common to all small manuals. The attempt to cover the ground of so wide a subject in so limited a space results, of necessity, in a treatment of the subject which lacks perspective. If the book aims to include everything from the bimanual examination to hysterectomy, neither the simpler nor the more difficult subjects will be treated in the best way. The first principles, the methods of examination, and the common everyday affections will not be fully enough discussed, while the more complicated operative procedures to be of any value must be much more minutely described, and had better be left to more comprehensive text-books. This inequality shows itself in this book particularly in the consideration of the methods of examination. The proposition that the bimanual examination "can be made equally well whether the patient lie on the left side or on the back" is certainly open to question. So, too, the author is evidently unfamiliar with the use of Sims's speculum, as in describing the use of Hegar's dilators he advises putting the patient in the *lithotomy* position, and introducing Sims's speculum.

The illustrations are unusually good for a work of this character, and the book is attractively printed and bound.

Lectures on Certain Diseases of the Jaws. By CHRISTOPHER HEATH, F.R.C.S., England, etc. 64 illustrations. P. Blakiston, Son & Co. 1888.

This volume of 128 pages is a reprint of a series of lectures delivered at the Royal College of Surgeons of England in 1887, and which subsequently appeared in the *British Medical Journal* for that year.[1] The subject is treated from a clinical standpoint chiefly, and is a valuable contribution to this especial department of surgery. It is divided into three lectures, entitled as follows: (1) Cystic disease of the jaws, including affections of the antrum; (2) tumors of the jaw; (3) diseases of the temoro-maxillary articulation and closure of the jaws. The lectures are well-written, and include the description of many cases illustrative of the affections described. The illustrations contribute to the completeness of the cases, especially in the lecture on tumors.

[1] Brit. Med. Journal, 1887, 1257.

A Compend of Surgery for Physicians and Students. By ORVILLE HORWITZ, B.S., M.D. Third edition, thoroughly revised, enlarged and improved, with ninety-nine illustrations. P. Blakiston, Son & Co. 1887.

This Quiz Compend is a manual based upon the most popular text-books of surgery of the day. It is well-arranged, condensed to a degree which sacrifices thoroughness, and would be useful alone to a student preparing for an examination on the subject of which it treats. The illustrations are practically all borrowed from the standard text-books on surgery. The book of to-day should have a little of the leaven of originality in its make-up, and this book cannot lay claim to any such distinction.

A Short Manual of Surgical Operations. By ARTHUR E. J. BARKER, F.R.C.S., Surgeon to University College Hospital, Assistant Professor of Clinical Surgery in University College, London. With 61 illustrations. pp. 425. London and New York: Longman, Green & Co. 1887.

The author, in this work, has given the profession a fairly complete compilation and collation of the operative procedures now in ordinary use. The author writes in a clear, terse, practical manner, giving the different operative procedures and his own experience in a short summary at the end of each description. Although certain parts of the work might well have been amplified, namely, the chapter on the operations on the nerves, he has accomplished the result of producing a very interesting and thoroughly reliable work. The book may well be classed among the best-filled, as it is, with the latest information on the given subjects, enriched by the author's personal experience.

The Rectum and Anus; their Diseases and Treatment. By CHARLES B. BALL, M. Ch., University of Dublin, F. R. C. S. I., surgeon to Sir Patrick Dun's Hospital, University Examiner in Surgery, and Member of Surgical Court of Examiners, Royal College of Surgeons, Ireland. With fifty-four illustrations, and four colored plates. Philadelphia: Lea Brothers & Co.

After carefully reading this work, one can but feel that the author has admirably accomplished the purpose for which the work was written. He has dealt with his subject comprehensively and tersely, clearly and frankly, showing a broad mental grasp of the subject, and yet never omitting minute details. The author has given not alone a "compilation" of the literature of the subject, but has brought to bear on this information a clear judicial mind well stored with personal experience which is so important in sifting the chaff. The chromo-lithographs are not works of art, and add but little to the value of the work. Few works, however, can be turned to in time of need that will give more accurate, satisfactory information, than this clinical manual.

Phosphorus Necrosis of the Jaws. By J. EWING MEARS, M.D. Reprinted from the Transactions of the American Surgical Association, Vol. III, 1885. Philadelphia: Wm. J. Dornan, printer, northwest corner Seventh and Arch Streets. 1886.

J. Ewing Mears has placed the profession under obligations to him in giving to it this little monograph of fifty pages. In it quite a full account is given of the dangers attending the different stages of the manufacture of matches, and the precautions which should be taken by employers to protect their employees is quite fully set forth. Directions are given for the local and operative treatment of the affection which is based on the author's large experience. The monograph may really be said to be an authority on the subject of which it treats.

— The Trustees of the Hoagland Laboratory of Brooklyn announce the completion of the Laboratory, and its equipment for practical work. Special facilities are offered to those who desire to prosecute original research. For this purpose private laboratories are provided, and arrangements are now being made for the purchase of a library which shall contain all the literature necessary for reference in the departments of bacteriology, physiology, and pathology. The course of lectures on "Bacteriology," by Dr. George M. Sternberg, already announced, will be postponed until his return from the South. The Trustees further announce that the services of George T. Kemp, Ph.D., Johns Hopkins University, have been obtained as Associate in Bacteriology and Physiology, and that with his assistance, and under the direction of Dr. Sternberg, practical instruction in bacteriology will be given during the winter and spring. The fee for this course of instruction has been placed at $15, which will entitle the subscriber to prosecute his studies until June 1, 1889, during as many hours of the day as he may desire. Applications for subscriptions to this course may be directed to J. H. Raymond, M.D., Secretary.

— The use of cocaine solutions for the purpose of anæsthetizing the sensitive mucous membrane of the urethra, would seem to be attended with some amount of risk. In July last a fatal case was recorded in this country, following the injection of the urethra with a solution of cocaine, and one or two cases have, according to the *Medical Press*, since been reported of convulsive seizures under similar circumstances. In certain persons cocaine, indeed, would appear to possess the power of inducing or precipitating epileptiform attacks quite irrespectively of the dose employed and of the particular route of entry into the circulation. The cyanosis and collapse which result with comparative frequency from an overdose, using this term in its physiological and not in its pharmaceutical sense, though very alarming, but rarely terminate fatally. It is desirable that all cases of untoward results should be published, so that the profession may be enabled to form a correct estimate of the danger incurred when this useful but occasionally toxic drug is resorted to.

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THERAPEUTICS AS JUDGED BY FIGURES.

UNDER this head, M. M. Bourgoni and Beurmann, continuing a work begun by Lasègue and Regnauld, and completed down to 1877, have published an interesting document relative to the yearly amounts of various medicines used in the public hospitals, dispensaries and prisons of Paris. This information was easy of obtension, as all the supplies pass through the Pharmacie Centrale, and the books of this establishment indicate the aggregate of sales of all pharmaceutical and medicinal articles in use in the numerous hospitals, and other public or charitable institutions of that great metropolis. Such statistics represent the therapeutical fashions of the day, the degree of esteem which the mass of practitioners have for this or that medicament, and the "survival of the fittest" among therapeutic means, as the really useful medicines are sure in time to come to the front, and what everybody prescribes the most must commend itself by the results which it gives.

The introduction of antisepsis into therapeutics "marks the most important and fruitful revolution of the last two decades." The enormous increase in the consumption of antiseptic agents shows how rapid and complete has been the success of the antiseptic method. The following table gives the yearly sales in kilogrammes of various members of that series from 1876 to 1885, inclusive:

	1876.	1877.	1878.	1879.	1380.	1881.	1882.	1883.	1884.	1885.
Phenic Acid..	369	1,258	1,179	1,625	2.876	3,700	5,782	11,518	11,955	11,217
Boric Acid...	10	2,500	17	43	101	192	237	502	1,057	1,909
Thymic Acid.	0.250	0.600	2.325	2.466	3.673	4.200	8.855	11.775	28	12.420
Thymol.....	..	..	..	..	1.250	0.750	0.250	1.250	10.400	3.950
Permang. of Potassium,	8.350	12	13	13	5	17	16.750	22.700	23.710	28

From the above table it will be seen that phenic acid, which for the first time appeared on the books of the Central Pharmacy in 1862, when the consumption was only 260 grammes, has been steadily rising in de-

mand, till the sales reached their maximum of 11,955 kgs. in 1884. Boric and thymic acids follow the same progression. Iodoform, of which only 22 kgs. were sold in 1876, reached the figure of 289 kgs. in 1884, and 353 in 1885. The increased demand for corrosive sublimate for surgical and obstetrical purposes, explains why the sales of this antiseptic have more than trebled within ten years.

Salicylic acid has undergone oscillations which indicate that medical opinion is not yet established with reference to the particular circumstances in which it should be employed; in fact, the sales have greatly fallen off the past four years. Salicylate of sodium, on the other hand, speedily reached a high figure, which it has maintained; sales which were nil in 1876 amounted, in 1880, to 324 kgs., and in 1885 to 355 kgs. This large demand for a medicament which is prescribed mostly for internal use, may be regarded as an indication of the success which has attended its employment in acute rheumatism. Subnitrate of bismuth, than which no medicine is more universally used in the treatment of diarrhœa, has also been steadily advancing in the rate of consumption. The consumption of quinine has also been on the increase; the sales in 1885 were 70 kgs. to offset 47 kgs. in 1876. Although, say the French writers, its specific action against the agent of the malarial infection has rarely to be sought in Paris, it none the less continues to be more and more in demand, and it is probable that this is due, on the one hand, to the becoming obsolete of means once relied on to combat elevated temperatures, such as bleeding and antimonials, and, on the other, to the fact that the antizymotic properties of quinine are oftener than ever sought and realized. The demand for the various kinds of cinchona bark, so much in vogue as agents of "the tonic medication," and used in the preparation of the wines, elixirs, extracts, etc., has also been on the increase, although the past two or three years there has been a perceptible falling off, as, for various reasons, faith in the so-called *tonics* has been on the decline. "These," say MM. Bourgoin and Beurmann, "are *superfluous medicaments* (*medicaments de luxe*) which respond to no precise indications, whose physiological and therapeutical action is not susceptible of any precise estimate, and which might without loss, disappear from hospital usage."

Ferruginous preparations, as a whole, remain stationary. This is attributed to the fact "that their utility remains demonstrated by the results of clinical experience." "The most recent hæmatological researches have been favorable to their usage in specifying their rôle in the reconstitution of the blood corpuscles. The lactate, the potassio-tartrate, the carbonate, seem to be favorite preparations, while the syrup of the iodide is in constantly increasing demand; this is thought to be largely owing to the fact that this preparation represents, in the estimation of most physicians, a mixed medicant in which the iodine plays no less important a rôle than the iron. The two arsenical preparations which appear to be the most popular are the granules of arseniate of soda and Fowler's solution. The consumption of the first has arisen from 2.800 kgs. in 1876 to 7 kgs. in 1885; the second, from 11 kgs. in 1876, to 44 kgs. in 1885. These figures show that professional confidence in the medicinal virtues of arsenious acid not only remains steady, but is on the increase.

Within the last decade the demand for alkalies has shown an augmenting ratio, and carbonate of lithia, which had for the first time, a place on the books of the Central Pharmacy in 1864, has become a staple article of commerce; the amount used in the hospitals in 1885 was about two kilogrammes.

An exhaustive table prepared by the French physicians shows that the consumption of purgatives the past ten years has been nearly uniform. There seems, however, to be a tendency to a reaction against their routine employment.

Certain agents of what used to be called the "spoliative medication" have certainly been constantly declining in popularity. Thus the sales of leeches which, in 1876, amounted to 50,650 kgs., had fallen in 1885 to 26,320 kgs. The maximum demand for leeches (according to the table of Lasègue and Regnauld) was in the year 1836, when it took 1,280,000 kgs. to supply the hospitals of Paris. On the other hand, the use of tartrate of antimony does not seem to have sustained much variation, due, in large part, to the prevalence of bronchial complaints, and the faith which the profession still has in this antimonial in the acute stages of these affections.

It is interesting to note that the consumptions of the alcohols, which was markedly on the rise when Lasègue and Regnauld made their report, has considerably depreciated since 1880. The French writers are inclined to see in this fall an indication "of the revival of active therapeutics as a substitute for the routine employ of tonics." The latter, in fact, "are often given, with the hypothetical end in view, to raise the forces of the patient, no matter what disease he may be affected with, at a time when there is no hope of reaching the pathogenic agent or attenuating its effects." This kind of treatment is denounced as unscientific, and as destined to fall into desuetude.

Among other interesting facts brought to light by this report, we note that anæsthetics continue in increasing demand. The consumption of both ether and chloroform has doubled during the last ten years. The multiplication of great operations in which the patient is kept long in a state of anæsthesia, sufficiently accounts for this rise, which has been synchronous with the progress realized in surgery through the introduction of antiseptics.

Of the various narcotics and hypnotics, opium still holds its high place. The sales in 1876 were 199 kgs., against 199 for 1885. The use of morphine seems to be on the increase. The consumption in 1885 was 17,060 kgs., as contrasted with 10,920 kgs. in 1876. Codeia seems to possess a growing favor. There has

been an increasing demand for granules of atropine, while chloral has been for eighteen years on the ascending grade. The demand for the bromides, with some fluctuations, has been steadily on the rise. Aconite and aconitia continually undergo fluctuations, which show that the medical men of France are not yet settled as to their real importance.

Of the new medicaments none has had such enormous extension as antipyrine. In 1884 the sales were entered at 725 grammes. It was then prescribed solely for antithermic purposes. In 1885 it was proclaimed to be a superb analgesic. The sales went up that year to 26.4 kgs., and have continued to rise. Of other antithermics, thallin and kairin have virtually gone out of use. Acetanalide, (antifebrin), however, meets with continually growing favor. Ergot and ergotine still hold their place in popular estimation. Their sales have nearly doubled during the past decade. Digitaline has gone out of vogue, while the demand for digitalis leaves is constant. Jaborandi and pilocarpine also seem to be on the decline, while coca and cocaine have been steadily on the rise. Among the neutral salts none is more in demand than chlorate of potassium, for its supposed utility in baccal and throat inflammations. The use of balsamics and of pepsin does not decline, while the antisyphilitics, iodide of potassium and mercurials are demanded in ever augmenting proportions, as the statistics of our authors clearly show.

INTUBATION IN GERMANY.

The interesting article on Intubation read at the late Congress at Washington, and recently printed in this Journal, will receive an added interest from a brief summary of the position of the operation in a country not too ready to acept American ideas.

Several recent communications have brought us knowledge of the position intubation holds in Germany, where the results, while not altogether satisfactory, are not certainly so poor as to discourage further trial. Professor Thiersch of Leipzig, however, who with Dr. Rehn[1] of Frankfort, reported his experience at the last Congress of German Surgeons, as is stated in a letter in the *New York Medical Record*, has laid aside the operation. Tracheotomy enters the lists with intubation, with the following statistics: the percentage of recovery at Leipzig is 24.5 in 697 operations; at the Hospital Bathanien in Berlin, 28%, in 1926 operations; at the Erlangen clinic, 27% in 113. Against these figures we have now of intubations: Thiersch with 32 cases and 3 recoveries, or 9.37%; Rehn with 14 cases and 4 recoveries, or 28.57%; and Graser with 5 cases and 1 recovery, or 20%. In 14 of Thiersch's cases a supplimentary tracheotomy was necessary.

These observers have not found in intubation the substitute for tracheotomy that they expected, both Thiersch and Graser allowing it to be such only for cases of croup where there is but little membrane and no swelling in the vestibule of the larynx. The difficulties encountered and the disadvantages have been much the same as here in America as, for example, the disturbance in swallowing, especially of fluids; that the children choke readily, and that the coughing out of the tube is especially dangerous; the tendency to inhalation-pneumonia; the liability to push down membrane before the tube; pain from the tube (Thiersch) and the necessity of direct and constant medical supervision in contrast with the sufficiency of a nurse in tracheotomy.

Graser[2] finds the new operation possessed of several advantages which if we are not mistaken have escaped previous observation. After declaring his conviction that intubation is easier to carry out, though to be sure he finds the question not one to be decided off hand, —tracheotomy is the "disturbing" operation, and "even the most experienced operator is relieved when he has the trachea bare," while the technique of intubation may be practised on the *cadaver* — he calls attention to the fact that air reaching the lungs through the natural passages is warmer and purer; even if a tracheotomy is necessary afterwards, as will very likely be the case in severe cases, intubation answers as well at first. Especially noteworthy is the consideration that the final removal of the intubation-tube never presents the difficulties that that of a tracheotomy canula often does. Graser has taken advantage of this in two cases where a tracheotomy canula could not be dispensed with at periods respectively of twelve days and six weeks by doing a secondary intubation; the laryngeal tube was removed with ease after five days in the first case, and in the second with difficulty in twelve days; hereupon an œdema glottidis ensued which made tracheotomy again necessary after twenty-four hours. In the discussion of Graser's paper a physician emphasized the fact that if the consent of parents were easier to obtain because it seemed less of an operation, nevertheless the dangers attending the introduction furnished an easy pitfall. Graser looks upon intubation as an addition to our resources to be further tested, and naively adds that the operation has not been well received in Germany because of a certain reserve towards American inventions, while many who have the instruments show little enthusiasm to use the, at first glance, somewhat hazardous instrument.

[1] Thiersch and Rehn. Zeitschft. f. Ther., July 15, 1888.

[2] Graser. Munch. Med. Wchnschft., Sept. 18, 1888, p. 631.

MEDICAL NOTES.

— At a meeting of the State Board of Health, says the Providence, R. I., *Telegram*, Secretary Fisher gave an account of the progress of the investigation of the causes of the typhoid fever epidemic in Bristol, R. I. Arrangements were made for such investigation on the 7th of August, and the work was commenced as soon as the authority was obtained from the governor, and the necessary means provided.

It is conjectured that milk supplied from a farm where typhoid had existed may have had something to do with the spread of the epidemic, and that the bacillus now under dissection, cultivation, and microscopic observation by the Board, and used for inoculation of guinea-pigs, may have had something to do with it. If the Board had had sooner notification or more authority, the ravages of the disease could in a great measure have been prevented. How soon the investigation will be ended it is not possible to foretell.

— The twenty universities of Germany granted 847 medical diplomas in the year 1886–87 against 689 in 85–86. In France the numbers for these years were respectively 624 and 546.

— The *British Medical Journal* calls attention to the following remarkable instance of endurance in old age, which was recently recorded in a French newspaper. A widow, aged eighty-one, was found in the forest of Fontainebleau, where she had been for six days and nights without any shelter but the trees. The weather at the time was very wet and cold, and the old woman had no food whatever, except a few mushrooms. She is of feeble intellect, and could give no account of herself, but it appears that she was in the habit of going out every day for a walk, and it is supposed that on this occasion she had wandered farther than usual and could not find her way home. When found, she was in a very serious condition, but her medical attendant was by no means hopeless of her recovery.

— The *Medical Press* quotes some interesting remarks bearing on the practice of opium smoking in China, from the last annual report of the colonial surgeon for Hong Kong, more especially as regards the consequences to confirmed smokers of being deprived of the pipe while in gaol. He says the experience obtained in the Hong Kong gaol is that the habit of opium smoking is far less deleterious than spirit drinking. Old confirmed smokers were often found to have preserved a good appetite and a healthy digestion, and the suffering attendant on the deprivation of opium (which is not allowed to any one in the prison) was not more than in the case of a tobacco-smoker deprived of his pipe. There were no evidences of genuine suffering from the deprivation, though opium in any form is carefully excluded, and although opium smokers were subjected to exactly the same diet as all other prisoners, they remained of the average weight. Opium smoking, held forth as the Chinaman's greatest vice, is, he says, certainly not to be compared in its evil effects with the European vice of spirit drinking, a habit to which the Chinese, as a nation, are not given. He suggests that instead of making such an outcry and wasting large sums of money in trying to reclaim the Chinaman, we might with much advantage look nearer home and attend to our own need of reform in respect of intemperance.

— The first insane asylum in Attica has just been opened. Previously the insane were confined in convents.

NEW YORK.

— The Hospital Saturday and Sunday Association held its first meeting for the season at St. Luke's Hospital, October 15th, when it was stated that the indications were that the collection would be, at least, quite as large this year as in 1886, when it amounted to $53,000. Last year, when the Presbyterian Hospital withdrew from the Association, it was $50,500. The Committee appointed some time ago to consider the question of admitting dispensaries attached to hospitals to a share in the distribution of the hospital fund reported in favor of such a step, and outlined a plan for carrying it out, but no decided action on the proposed measure was taken by the Association.

— The corner-stone of the Townsend Memorial Building at Bellevue Hospital was laid October 16th with religious exercises, in which Archdeacon Mackay-Smith, the Rev. H. Y. Satterlee, D.D., and others participated. On the ground-floor of the building are to be the mortuary, the store-rooms for the use of the church guilds engaged in charitable work among the city hospitals, and the chaplain's room. On the second floor will be a reading-room, lecture-room, and library, all attractively fitted up; and on the third floor will be a handsome chapel, capable of seating two hundred persons.

— Dr. Paul Gibier, of Paris, the expert sent by the French Government to investigate yellow fever in Havana, recently arrived in New York on his way to Jacksonville, Florida, to make some further studies in connection with the disease. Previous to landing in Havana in October, 1887, he had himself twice inoculated with the yellow fever virus of Freire. The inoculation was made by means of a lancet, however, and the effects were but slight. On landing at Havana, he determined to have the inoculation made by means of a hypodermic syringe, as prescribed by Freire, and the illness resulting, although not resembling yellow fever in its symptoms, was so severe as nearly to prove fatal. His investigations in the hospitals, in which he was facilitated in every way by the authorities, led him to the same negative conclusions as Dr. Sternberg in regard to Freire's alleged discoveries.

— On Monday evening, October 22d, Dr. T. Gaillard Thomas gave a large medical reception at his residence to Dr. William O. Priestley, of London.

Miscellany.

AMERICAN MEDICAL ASSOCIATION.

THE fortieth annual meeting of the American Medical Association, which has been postponed from the first to the fourth Tuesday of June, the 25th, 1889, will be held at Newport, R. I., on the 250th anniversary of the settlement of that city.

The following is the Committee of Arrangements: H. R. Storer, Chairman; C. F. Barker, M. E. Baldwin, C. A. Brackett, J. P. Curley, P. F. Curley, J.

P. Donovan, H. Ecroyd, Jr., V. M. Francis, T. A. Keiefick, G. M. Odell, F. H. Rankin, W. C. Rives, Jr., S. H. Sears, W. S. Sherman, H. E. Turner; W. Thornton Parker, Local Secretary.

The Associate Committee appointed by the Rhode

pernicious anæmia the seat of disintegration is chiefly the portal circulation, more especially that portion of it contained within the spleen and the liver, and the destruction is effected by the action of certain poisonous agents, probably of a cadaveric nature, absorbed from the intestinal tract.

LACTIC ACID IN TUBERCULOUS ULCERATIONS AND LUPUS.

The treatment of tuberculous ulceration of the skin and mucous membranes by lactic acid has been advocated by Mosetig, and his favorable conclusions have been tested by M. Rafin, consulting surgeon to the General Hospital of Lyons. (See *Lyons Méd.*, July 8, and *Practitioner*, Sept., 1888). He employed it first in two cases of tuberculous ulcer of the tongue, in which the diagnosis seemed very plain. Both patients were middle-aged men, of regular habits, with no sign or history of syphilis. The first (Antoine F.) was treated for a while with potassium iodide as a tentative measure to make the diagnosis more certain. No relief followed. One leg had been amputated for tuberculous disease of the knee; the tuberculous symptoms of the lungs were far advanced. The ulcer on the tongue was about the size of a shilling, with rough edges, and no induration. After the trial of potassium iodide the patient was put upon large doses of cod-liver oil, with a little liquor arsenicalis. The ulcer was painted twice a day with an eighty per cent. solution of lactic acid. The improvement was not very rapid, but was continuous, and in six weeks the ulcer was completely healed. The patient died six months later of pulmonary phthisis, but the healthy scar tissue did not break down. The second case was rather less severe, with less general tuberculosis. Under the same treatment the ulcer healed completely in six weeks.

The first case of tuberculous lupus was in a girl (Marie B.) of sixteen, of scrofulous temperament, who had much glandular swelling and blepharitis. The lupus affected the tip of the nose and both *alæ nasi*. No tuberculosis of the internal organs was recognized. Local treatment by an eighty per cent. solution of lactic acid was followed after two months by complete recovery. The second case was in a man of twenty-one in whom the nose had been affected since he was thirteen. There was no tuberculous history or further tuberculous symptoms. He was treated with cod-liver oil and arsenic, and locally with the same solution of lactic acid. The recovery was slow, but steady, and after six months it was admitted to be complete after a careful examination before the Medical Society of Lyons.

In considering other cases of successful treatment of tuberculous ulcer of the tongue, one case of cure by chromic acid (Verneuil) is found, one by cupric nitrate (Flemming), two by iodoform (Fournier), others by salicylic acid. In tuberculous lupus the treatment adopted has been very various, but the methods that have met with any success have been electrolysis, scarification, and the application of some destructive substances. Mosetig claimed for lactic acid that it destroyed morbid but not healthy tissues. This M. Rafin is inclined to admit from his own observations. The base of the ulcers slowly detached itself, the caseous portions disappeared, and then granulated healthily, the fresh tissue growing from their edges. The

progress was not rapid, but successful in all the four cases in which it was used. Of its special action on the tubercle bacillus, M. Rafin professes no knowledge.

CURRENT TOXICOLOGICAL NOTE

IN the *Therapeutic Gazette* for October we or three interesting notes on poisoning by atr tipyrine, and cocaine. The first is taken fron number of the *Journal of the American Medi ciation*, in which two physicians report case soning by atropine. In one case recorded b Eliot, of Washington, four grains of the sul alleged to have been taken at a draught in solution. About an hour afterwards, when by the doctor, the woman presented in a mo form the well-known symptoms of atropine-p Two hypodermic injections (one-twelfth of each) of apomorphine failed to vomit. One third grains of sulphate of morphine were tered hypodermically in the course of eighty with a distinct change in the symptoms tow opium type; caffein and strong coffee were th given, and recovery finally occurred. The ported by Dr. J. McKone also ended in rec one of them, that of a woman aged thirty-five one and one and a half grains of the alkal were taken.

In regard to the symptomatology of these is interesting to note that in each instanc muscular twitchings and a marked tendency convulsions are recorded, and that in one pati were several attacks of opisthotonos.

The recovery reported by Dr. Eliot is rem but appears to find its parallel or superior put on record by a Dr. Machiavelli (*Jahresb Ges. Medicin*, 1880). In the latter instanc result is affirmed to have been averted, alth a gramme, or over seven grains, of the alkal were taken. It is true that in atropine-pois covery usually occurs, but much smaller amo those just named have taken life. Lewin states that one grain may cause death. T collection of cases we can at present call t that of Dr. Eliot, and in the only instance which three grains were ingested death resu a case mentioned by Taylor in his "Medical dence," two grains induced a lethal issue.

So far as our reading goes, no serious poi antipyrine occurring in a person not suffer some acute constitutional disease has been ported. That enormous amounts may be shown by the case reported by Dr. Lauphe *Kansas City Index*. A woman, aged fifty-tw ing from osteoscopic pains, took for relief i in five days one and a half ounces of antipyr first there was an analgesic influence, but th off; there seems to have been no worse res the remedy than weakness and pronounced Her skin was purple, her swollen lips black extremities much swollen.

A rather remarkable case of cocaine-poi reported in the *Australasian Medical Gazett* 1888. Six grains were injected hypoderm a dentist. The pulse fell to 38, very weak termittent; the respirations diminished to five shallow and irregular; consciousness was pe skin pale, dry, and cold. Subsequently, the patient became unconscious and pulseless, but under artificial respiration and hypodermic [illegible]

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 13, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	702	267	19.60	14.14	6.02	2.10	3.64
Philadelphia	1,016,758	333	111	13.80	12.60	1.80	5.10	4.50
Brooklyn	751,432	284	114	19.25	15.40	4.20	2.80	4.55
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	147	47	15.64	12.24	4.76	2.04	3.40
Boston	407,024	186	74	22.14	14.04	5.40	5.94	8.10
Cincinnati	325,000	83	—	24.00	6.00	6.00	3.60	12.00
New Orleans	248,000	114	39	23.76	9.68	3.52	.88	10.56
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	110	38	25.48	15.47	2.73	8.19	3.64
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	13	4	30.76	23.07	15.38	15.38	—
Charleston	60,145	36	8	11.11	18.46	2.78	8.34	—
Portland	40,000	11	3	—	9.09	—	—	—
Worcester	76,328	27	13	18.50	11.11	11.11	3.70	3.70
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	25	7	12.00	20.00	4.00	8.00	—
Fall River	61,203	33	13	24.24	18.18	9.09	12.12	—
Lynn	51,467	15	0	6.66	20.00	—	6.66	—
Lawrence	40,175	22	5	13.62	13.62	4.54	9.08	—
Springfield	39,952	12	1	16.66	8.33	8.33	8.33	—
New Bedford	36,298	13	3	15.38	7.69	15.38	—	—
Somerville	33,307	12	7	25.00	—	8 33	—	8.33
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	12	3	8.33	8.33	—	—	8.33
Chelsea	27,552	7	2	—	28.56	—	—	—
Haverhill	24,979	9	3	22.22	11.11	11.11	—	—
Taunton	24,796	7	2	14.28	14.28	14.28	—	—
Brockton	24,784	6	0	33.33	33 33	—	16.66	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	9	0	33.33	11.11	—	22.22	11.11
Malden	18,932	8	3	12.50	25.00	—	—	12.50
Fitchburg	17,534	8	2	—	25.00	—	—	—
Waltham	16,651	7	1	—	28.56	—	—	—
Newburyport	13,839	3	1	33.33	33.33	33.33	—	—
Northampton	13,336	—	—	—	—	—	—	—

Deaths reported 2,254: under five years of age 771; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 426, consumption 312, acute lung diseases 240, diarrhœal diseases 108, diphtheria and croup 105, typhoid fever 86, whooping-cough 40, scarlet fever 34, malarial fever 28, measles 11, cerebro-spinal meningitis eight, erysipelas five, puerperal fever one. From whooping-cough, New York 17, Brooklyn eight, Boston and Washington four each, Philadelphia three, Baltimore two, Cincinnati and New Orleans one each. From scarlet fever, New York 19, Brooklyn seven, Philadelphia four, Baltimore three, Haverhill one. From malarial fever, New Orleans nine, Brooklyn six, Washington seven, New York and Baltimore two each, Philadelphia and Cincinnati one each. From measles, New York 11. From cerebro-spinal meningitis, New York three, Boston, Washington, Fall River, Somerville and Brockton one each. From erysipelas, New York four, Brooklyn one. From puerperal fever, Baltimore one.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273 for the week ending October 6th, the death-rate was 18.2. Deaths reported 3,286; infants under one year of age, 1,035; acute diseases of the respiratory organs (London) 239, diarrhœa 286, measles 55, scarlet fever 49, diphtheria 47, fever 40, whooping-cough 28.

The death-rates ranged from 12.8 in Oldham to 29.8 in Manchester; Birmingham 15.0; Bradford 18.6; Hull 19.6; Leeds 21.7; Leicester 18.1; Liverpool 19.7; London 16.5; Newcastle-on-Tyne 21.7; Nottingham 13.1; Sheffield 22.9; Sunderland 17.0; Wolverhampton 13.4.

In Edinburgh 15.1; Glasgow 18.0; Dublin 23.3.

SOCIETY NOTICES.

NORFOLK DISTRICT MEDICAL SOCIETY. — A stated meeting will be held at Rockland Hall, 2343 Washington Street, Roxbury, Tuesday, October 30, at 2 P.M. Examination of candidates for membership at 1 P. M. Written examination will begin at 1 P. M.; oral at 2 P. M. Order of business: Reading of Records; Report of Committees; Election of Nominating Committee; Incidental Business. Communications: I. "The Necessity of More Frequent Examination of the Urine," by Herbert W. White, M.D. II. "Migraine and its Treatment," by Harry M. Cutts, M.D.

S. ALLEN POTTER, M.D., *Secretary.*

SUFFOLK DISTRICT MEDICAL SOCIETY. — There will be a stated meeting on Saturday, October 27, 1888, at 8 P. M., at 19 Boylston Place. Dr. C. W. Townsend will read a paper on "Acute Lobar Pneumonia in Children." Dr. C. B. Porter will report a case of "Pelvic Hæmatocele. Operation by Laparotomy, Suture of the Sac to the Abdominal Wound, Drainage and Recovery." Dr. M. H. Richardson will report a case of "Laparotomy for Volvulus." Dr. F. B. Harrington will report a "Case of Removal of a Large Part of the Frontal Bone for Compound Fracture, with Recovery." Choice of a Committee of five to prepare a list of candidates for officers of the Society. Supper after the meeting. Members are requested to notify the Secretary of any change of address.

HERMAN F. VICKERY, M.D., *Secretary.*

OBITUARY. DR. L. WADSWORTH TUCK.

Dr. L. Wadsworth Tuck, house-physician at the City Hospital, died on October 18th, of diphtheria, contracted in the discharge of his duties, which had been more than faithfully performed. Dr. Tuck was twenty-eight years old, a graduate in high standing from Amherst College and the Harvard Medical School. After contending bravely and successfully with many difficulties, he was expecting in a few weeks to enter upon the practice of his profession. He was ill but six days, and bore without impatience or complaint the sufferings of this malignant disease.

Dr. Tuck was buried at South Weymouth, his home, where he was widely known and esteemed. At the largely attended memorial service held in the Union Church, the well-chosen words of the pastor's address paid a just tribute to the character of the deceased young physician.

The meteorological record for the week ending October 13, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week ending Saturday, Oct. 13, 1888.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.[1]		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum	8.00 A. M.	8.00 P. M.	Daily Mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Duration. Hrs. & Min.	Amount in Inches.
Sunday, . . . 7	29 51	58.0	63.0	53.0	100.0	70.0	85.0	S.	N.W.	10	12	R.	O.	16.00	.96
Monday, . . . 8	29.37	50.0	61.0	44.0	66.0	60.0	63.0	N.W.	W.	12	12	O.	C.		
Tuesday, . . . 9	29.68	40.0	49.0	36.0	57.0	74.0	66.0	N.W.	W.	12	11	O.	O.		
Wednes, . . . 10	29.90	41.0	49.0	36.0	53.0	60.0	56.0	N.W.	N.	12	11	C.	C.		
Thursday, . 11	29.98	45.0	55.0	34.0	76.0	67.0	72.0	N.W.	S.E.	8	5	C.	F.		
Friday, . . . 12	29.90	48.0	51.0	45.0	74.0	93.0	84 0	N.E.	N.E.	24	13	O.	R.		.06
Saturday, 13	29.76	48.0	55.0	42.0	93.0	78.0	88.0	N.E.	N.	7	12	R.	O.	32.00	.13
Mean, the Week.															

[1] O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., Snow; *T., trace of rainfall.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. A., FROM OCTOBER 13, 1888, TO OCTOBER 19, 1888

By direction of the Secretary of War the following-named officers of the Medical Department will report in person, on October 23, 1888, to the President of the Army Medical Board, Army Building, New York City, for examination for promotion:

GARDINER, JOHN DE B. W, captain and assistant surgeon;
GORGAS, WILLIAM C., captain and assistant surgeon;
MACAULEY, C. N. BERKLEY, captain and assistant surgeon;
KNEEDLER, W. L., first lieutenant and assistant surgeon;
MEARNS, EDGAR A., first lieutenant and assistant surgeon.

Upon the completion of their examination the officers named will rejoin their proper stations. Paragraph 1, S. O. 229, A. G. O., Washington, D. C., October 13, 1888.

MUNDAY, BENJAMIN, captain and assistant surgeon. Is relieved from duty at Jefferson Barracks, Mo., and will report in person to the commanding officer Fort Sisseton, Dak., for duty at that post, relieving JOHN L. PHILLIPS, first lieutenant and assistant surgeon, and reporting by letter to the commanding general department of Dakota. Paragraph 11, S. O. 242, A. G. O., Washington, October 17, 1888.

PHILIPS, J. L., first lieutenant, on being relieved by CAPTAIN MUNDAY, will report in person to the commanding officer Fort Lyon, Colo., for duty at that post, reporting by letter to the commanding general Department of the Missouri. Paragraph 11, S. O. 242, A. G. O., Washington, October 17, 1888.

COMEGYS, EDWARD T., captain and assistant surgeon. Is relieved from duty at Madison Barracks, New York, and will report in person to commanding officer Fort Bayard, N. M., for duty at that post, relieving WILLIAM D. DIETZ, first lieutenant and assistant surgeon.

DIETZ, W. D., first lieutenant, on being relieved by CAPTAIN COMEGYS, will report in person to commanding officer Alcatraz Island, Cal., for duty at that post, reporting by letter to the commanding general Department of California. Paragraph 18, S. O. 240, A. G. O., Washington, October 15, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING OCTOBER 20, 1888.

MAGRUDER, A. F., surgeon. Ordered to Marine Barracks, Washington, D. C.

STONE, E. P., assistant surgeon. Detached from the "Richmond" and to the "Minnesota."

KEENEY, J. F., assistant surgeon. Detached from the "Minnesota" and to the "Richmond."

MCCORMICK, A. M. D., assistant surgeon. Detached from the Bureau of Medicine and Surgery, and to the "Vermont."

MOORE, A. M., surgeon. Detached from Naval Station, New London, Conn., and to the "Kearsarge."

AUSTIN, A. A., passed assistant surgeon. Ordered to Naval Station, New London, Conn.

DEATH.

Died in Boston, October 19, 1888, Lorenzo Wadsworth Tuck, M.D., M.M.S.S., aged twenty-eight years.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING OCTOBER 20, 1888.

ARMSTRONG, S. T., passed assistant surgeon. Granted leave of absence for sixteen days. October 17, 1888.

WOODWARD, R. M., assistant surgeon. When relieved at Marine Hospital, Boston, Mass., to proceed to Marine Hospital, Chicago, Ill., for duty. October 12, 1888. Granted leave of absence for thirty days. October 17, 1888.

CONDICT, A. W., assistant surgeon. Relieved from duty at Marine Hospital, Chicago, Ill., ordered to Marine Hospital, Boston, Mass. October 12, 1888.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Ninetieth Annual Session, held at Baltimore, Md., April, 1888.

Biennial Report of the Officers of the Vermont Asylum for the Insane, for the two years ending July 31, 1888.

Transactions of the American Association of Obstetricians and Gynecologists at the First Annual Meeting, held in Washington, D. C., September 18, 19, and 20, 1888. Abstract. Reprint.

Report for the Year 1887–88, Presented by the Board of Managers of the Observatory of Yale University, to the President and Fellows.

Handbook of Historical and Geographical Phthisiology with special reference to the Distribution of Consumption in the United States. Compiled and arranged by George A. Evans, M.D. New York: D. Appleton & Co. 1888.

The Ear and its Diseases, being Practical Contributions to the Study of Otology. By Samuel Sexton, M.D., Aural Surgeon to the New York Eye and Ear Infirmary; Fellow of the American Otological Society; Fellow of the New York Academy of Medicine; Member of the Medical Society of the County of New York, and of the Practitioners' Society of New York. Edited by Christopher J. Colles, M.D. Octavo, 473 pages. Numerous illustrations. New York: William Wood & Co.

Disinfection and Disinfectants: Their Application and Use in the Prevention and Treatment of Disease, and in Public and Private Sanitation. By the Committee on Disinfectants, Appointed by the American Public Health Association. Concord, N. H.: Republican Press Association. 1888.

Hydrocephalic Amaurosis. By Jabez Hogg, Consulting Surgeon to the Royal Westminster Ophthalmic Hospital, Hospital for Women and Children, etc. Reprint. 1888.

Eine neue Anwendung der Paraffin. Methode. Von Dr. William C. Krauss. Attica (New York). Berlin NW.: H. Kornfeld. 1888.

Chemical Experiments for Medical Students, arranged after Beilstein. By W. S. Christopher, M.D., Demonstrator of Chemistry, Medical College of Ohio, Cincinnati. Robert Clarke & Co., publishers.

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Original Articles.

NERVOUS AFFECTIONS FOLLOWING INJURY.[1]

("CONCUSSION OF THE SPINE," "RAILWAY SPINE," AND "RAILWAY BRAIN.")

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It is rather singular that the two most elaborate works on those affections of the nervous system which are supposed to follow injury should have been written by surgeons, and should have been based on the evidence of railway cases. One of these works, the influence of which is not yet dead, is based upon the ideas in regard to the pathology of the nervous system which obtained twenty years ago, and treats of all forms of injury of the central nervous system under the most misleading heading of "concussion of the spine;" the other, which reads like the work of a special pleader for the railway companies, discusses case after case of obscure nervous disease without mention of the condition of the reflexes. Fortunately, however, the attention of neurologists has of late been directed to the subject, and, since the appearance of Page's first treatise in 1881, many valuable contributions to our knowledge have been made in this country and in Europe, and the work done in Germany, especially, has brought the matter more fully to our attention.

Erichsen's composite of "concussion of the spine" has been found to be compounded of too many distinct conditions to be trustworthy, and, from the vagueness of his classification, his ideas on prognosis proved misleading; yet his work has had such an influence that the English railway companies are said to have paid eleven million dollars in damages in five years, and I have no question that it has also had an influence upon the great sums that have been paid in this state. The reaction, of course, followed, and it was aided by the cynicism that naturally arises when we see a man, who has claimed to be permanently injured, walk off as well as ever when the "damages" have been paid. It has seemed to me, however, that this reaction has gone too far, and therefore I have thought it worth while to go over the subject once more, and to review some of the recent work that has been done upon it. Before discussing controverted points, however, I will mention briefly certain definite lesions of the nervous system which may unquestionably follow injury.

Among the commoner results of injury are the affections of the peripheral nerves. The obstinate pain and persistent weakness of the shoulder which so often follow an injury are probably due to an implication of certain nerve fibres in the peri-arthritic process. Beside that, we often see various local paralyses, due to all sorts of lesions of the nerves, from simple pressure to severe crushing, — paralyses of all forms of intensity, from the transitory forms with normal electrical reactions to the severe atrophic forms with reaction of degeneration. The prognosis, of course, varies with the degree of injury, and is governed by the ordinary rules.

Trauma may produce certain definite lesions of the spinal cord and its coverings, beside the vague and questionable results of pure "concussion." It may, in the first place, cause fracture or dislocation of the vertebræ, and, secondarily, affect the cord itself. In these cases it not infrequently happens that the patient exhibits the symptoms of injury to the cord, while the injury to the vertebræ is noted only at the autopsy. With or without injury of the vertebræ, however, we may find serious injury to the cord, — hæmorrhage into the meninges or into the cord itself, rupture of the pia with hernia of the cord, or acute myelitis.[2]

In addition to these cases of what may be called "acute injury to the cord," where the symptoms develop immediately after the accident, it is a well-attested fact that chronic degenerative processes may be due to injury; and here, of course, the symptoms are very insidious in their onset. Spitzka[3] and Gowers[4] cite cases of tabes dorsalis due to injury, and Hoffmann[5] has just reported a very interesting case of tabes from Erb's clinique at Heidelberg due to a prolonged daily concussion of the whole body, especially the abdomen. Dana,[6] too, has cited a case where tabetic symptoms followed a railway injury to a syphilitic subject, where he thinks the accident determined the localization of the morbid process. Beside tabes, injury may produce lateral sclerosis, progressive muscular atrophy,[7] diffuse sclerosis,[8] and disseminated sclerosis,[9] — the last two affections especially being extremely difficult to diagnosticate in their early stages.

There is, or rather was, another lesion of the cord which was once deemed of great importance and was regarded by Erichsen[10] as the chief source of the symptoms of his "concussion of the spine," — namely, spinal lepto-meningitis. We used to hear of it, but lately the cases have become rare, and, in fact, few now disagree with Strümpell's dictum,[11] — "A case of primary chronic lepto-meningitis, which can be surely and convincingly proven clinically and anatomically, does not exist."

Finally, in the brain and its coverings injury may produce various lesions, — fracture of the skull, meningeal and intra-cerebral hæmorrhage, pachymeningitis interna hæmorrhagica, meningitis, softening, abscess, tumor, and various functional disorders, such as epilepsy, paralysis agitans, and chorea.[12] Furthermore, injury may give rise to various psychoses[13] and chronic degenerative processes, especially paretic dementia,[14] and of some

[1] Read before the Boston Society for Medical Improvement 26th March, 1888, and before the American Neurological Association at the First Triennial Congress of American Physicians and Surgeons, 18th September, 1888.

[2] E. Leyden. Klinik der Rückenmarkskrankheiten, i. 371, ii. 61, 92, 139.

[3] E. C. Spitzka. The Chronic Inflammatory and Degenerative Affections of the Spinal Cord. Pepper's System of Medicine, v. 855.

[4] W. R. Gowers. Diseases of the Nervous System, i. 289.

[5] J. Hoffmann. Beitrag zur Ätiologie, Symptomatologie und Therapie der Tabes dorsalis. Archiv f. Psychiatrie u. Nervenkrankheiten, xix. 438, 1888.

[6] C. L. Dana. Nervous Syphilis following a Railroad Injury. The Post-graduate, April, 1888.

[7] W. R. Gowers. *Op. cit*, i. 450.

[8] W. R. Gowers. *Op. cit.*, i. 238.

[9] E. C. Spitzka. *Op. cit.*, p. 884.

[10] J. E. Erichsen. On Concussion of the Spine, p. 55.

[11] A. Strümpell. Lehrbuch der speciellen Pathologie und Therapie der inneren Krankheiten, ii. 1, 450, 4te Aufl.

[12] Ch. Bataille. Traumatisme et Névropathie.

[13] Hartmann. Ueber Geistesstörungen nach Kopfverletzungen. Archiv f. Psychiatrie u. Nervenkrankheiten, xv. 98, 1884.

[14] R. v. Krafft-Ebing. Lehrbuch der Psychiatrie, i. 166.

of these, and of certain functional nervous affections, I will speak later.

Thus far all is clear and well defined. It would require an exhaustive treatise to speak fully of all these conditions and to dwell on their diagnosis and prognosis. They are met with more or less often, and usually they can be readily recognized. Beside these affections, however, there are other cases of a more obscure character, where our diagnosis is often doubtful and our prognosis sadly at fault.

Whether there is a true "concussion of the spinal cord" is still a matter of doubt. By this term I mean a paraplegia following injury, where the cord has sustained no coarse mechanical lesion, where "molecular changes in the finer nerve-elements have occurred, giving rise to an immediate and complete functional paralysis," [15] — a condition analogous to the commoner concussion of the brain. Page [16] questions the possibility of such an affection, but cases have been reported which clinically answer the requirements.[17] The anatomical relations of the cord naturally render it difficult for true concussion to occur; and, moreover, in simple concussion there is apt to be recovery, so that post-mortem evidence is lacking. Cases have been reported,[18] however, where paraplegia came on suddenly after injury and terminated fatally, although no lesion could be found after death. Some of these cases are, of course, untrustworthy, as they were observed at a time when the methods of examining the cord were less exact, so that it is hard to exclude the existence of contusion or punctate hæmorrhages into the cord. Duménil and Petel,[19] however, still hold to a belief in commotion of the cord, which may be the origin of consecutive inflammatory lesions or sclerosis, and Dana [20] admits the existence, rarely, of true concussion. Some writers, Obersteiner [21] among them, hint at the existence of chronic concussion in men who are constantly exposed to jarring, as railway employes, but such cases are more likely to be classed among the degenerations of the cord, as in Hoffmann's case already cited.

Beside the true concussion there are a host of obscure affections which have been classed by Erichsen under the general head of "spinal concussion," and about which there has been much controversy. Dr. R. M. Hodges,[22] in a paper read before the Boston Society for Medical Improvement eight years ago, was one of the early dissenters from the views of Erichsen. He showed that a strain of the muscles or ligaments of the spine was capable of explaining many of the symptoms, and he believed that many of the cases were cases of functional nervous disease. Soon after Page [23] advocated the same views with somewhat more detail, ascribing the symptoms in cases of "railway spine" to a traumatic lumbago (that is, a strain) and a traumatic neurasthenia caused by the shock and terror of the accident.

Two years later Walton [24] found that in a number of cases of injury there was anæsthesia or hemianæsthesia, often involving the special senses, and, calling our attention [25] anew to the fact that many of the symptoms were cerebral, he suggested the term "railway brain," as more suitable than "railway spine." About the same time Putnam [26] reported similar cases, and they both suggested the relation between hemianæsthesia and hysteria. This theory has been further elaborated by Charcot,[27] who states that "these grave and obstinate nervous states, which are presented as the result of railway collisions, rendering their victims unable to return to their work or resume their ordinary occupations for periods of several months or even years, are often only hysteria, nothing but hysteria." Much of Charcot's last volume is devoted to the description of cases of traumatic hysteria, and a number of his pupils have published further studies upon the subject.

Before all this, in 1880, Westphal [28] had reported three cases of "railway spine," and had advanced the theory that the symptoms were due to small foci of myelitis or encephalitis caused by trauma, and that they were analogous in their symptoms to multiple sclerosis. Since then Westphal's assistants, Thomsen and Oppenheim, have made [29] an elaborate study of sensory disturbances in all forms of nervous disease, including railway spine, and have shown that hemianæsthesia is not pathognomonic of hysteria; and Oppenheim,[30] in a later paper, has carefully studied a second series of cases of "railway spine," with the result of substantiating Westphal's views.

Before discussing these various theories I will cite, as briefly as possible, some cases of nervous affections following injury that I have seen in the last three years. I have not selected these cases in the support of any theory, but I have picked out cases of different types, representing as fairly as possible the whole number of cases that I have seen. In only three cases was there any question of damages. One of these was a child, and another was seen after the award had been made, although a question of appeal was pending. Thus we can eliminate at the start two factors which have tended to obscure the subject and to bias opinion — the idea of simulation and the excitement that naturally attends litigation and is often a hindrance to recovery. This gives a more satisfactory basis to reason from, for, as the late Dr. Curtis said [31] in the dis-

[15] W. H. Erb. Diseases of the Spinal Cord. Ziemssen's Cyclopædia, xiii 347.

[16] H. W. Page. Injuries of the Spine and Spinal Cord, p. 33.

[17] Wm Hunt. Concussion of the Brain and Spinal Cord. Pepper's System of Medicine, v. 913.

[18] F. Leyden. *Op. cit.*, ii 93.

[19] Duménil and Petel. Commotion de la moelle épinière. Archives de Neurologie, Jan., Mar, May., 1885.

[20] C. L. Dana. Concussion of the Spine and its Relation to Neurasthenia and Hysteria. Medical Record, 6th Dec., 1884.

[21] H. Obersteiner. Ueber Erschütterung des Rückenmarks. Med. Jahrbücher, p. 531, 1879.

[22] R. M. Hodges. So-called Concussion of the Spinal Cord. Boston Medical and Surgical Journal, 21st, 28th April, 1881.

[23] H. W. Page. *Op. cit.*, p. 116 *et seq.* Also Boylston Prize Dissertation for 1881.

[24] G. L. Walton. Two Cases of Hysteria. Archives of Medicine, Aug., 1883.

[25] G. L. Walton. Possible Cerebral Origin of the Symptoms Usually classed under "Railway Spine." Boston Medical and Surgical Journal, 11th Oct., 1883.

[26] J. J. Putnam. Recent Investigations into the Pathology of so-called Concussion of the Spine, etc. Boston Medical and Surgical Journal, 6th Sept., 1883. The Medico-Legal Significance of Hemianæsthesia after Concussion Accidents. American Journal of Neurology and Psychiatry, Nov., 1884.

[27] J. M. Charcot. Leçons sur les maladies du système nerveux, iii 251.

[28] C. Westphal. Einige Fälle von Erkrankung des Nervensystems nach Verletzung auf Eisenbahnen. Charité-Annalen, v. 379. 1878.

[29] R. Thomsen und H. Oppenheim. Ueber das Vorkommen und die Bedeutung der sensorischen Anästhesie bei Erkrankungen des centralen Nervensystems. Archiv f. Psychiatrie u. Nervenkrankheiten, xv. 559, 635. 1884.

[30] H. Oppenheim. Weitere Mittheilungen über die sich am Kopf verletzungen und Erschütterungen (in specie: Eisenbahnunfälle) anschliessenden Erkrankungen des Nervensystems. Archiv f. Psychiatrie u. Nervenkrankheiten, xvi. 743. 1885.

[31] Boston Medical and Surgical Journal, 5th Feb., 1880.

cussion of Dr. Hodges' paper, "treatises based, like Erichsen's work" — and the same may be said of Page and Rigler — "upon the evidence of railway cases are certainly the last sources of information from which one may learn to make a correct diagnosis and prognosis, and to escape being deceived by the voluntary or involuntary exaggeration and simulation so commonly observed in plaintiffs seeking damages." The sub-heading of "railway" spine and brain is hardly appropriate, for railway accidents were not the cause of the trouble in the majority of cases, and none of them were victims of a great railway accident, like that at Roslindale. Of course a railway accident has no specific effect, except that in it are brought into play the most tremendous forces that we employ in our daily lives, and the terror and horror of any great railway catastrophe has a vastly greater psychical effect.

I give the cases as briefly as possible, omitting unessential symptoms. I regret that in some of them my investigations in the domain of the special senses have not been as thorough as I could have wished.

I. Jeremiah C., 37, m., railway employe, consulted me in March, 1887. A year and a half before he was knocked off a cable car, striking his back, and losing consciousness. On return of consciousness he went back to work, and kept at it for an hour or two, but afterwards he was laid up for seven weeks. Now he has pain in the back, especially on motion, with rigidity of the spine, and lumbar tenderness. His arms feel helpless; he has numbness and tingling in the hands and at times in the legs; the legs are not as strong, and he has had cramps in them. Occasional vertigo, and rush of blood to the head. Nervous, fretful, low-spirited, and poor memory. Some vesical tenesmus, and loss of sexual power. Some exaggeration of knee-jerks. Some improvement under faradism and the actual cautery.

II. John D., 30, m., organ finisher, consulted me in February, 1888. Fell down stairs a month ago, striking small of back and buttocks. Great pain in the back. Diminished power in left leg. He cannot bend his spine, and has great tenderness in the lumbar region. He has a desire to empty his bladder most of the time, and, when he passes water, he thinks he is through before he really is, occasionally wetting himself. No sexual power since the accident. Quite nervous and rather alarmed as to his condition. Knee-jerks rather quickened, a tap setting up a general shrinking, as if from pain.

III. Martin H., 46, m., draw-tender. Referred to me at the Boston Dispensary, in August, 1886. Two years ago fell from a mast, thirty-six feet, striking back. Since then has had sharp pains in the back and abdomen, shooting down the legs. The legs are easily fatigued, feel numb and prickly, and as if a pad were between them and the floor. "Drawing" girdle sensation. Twisting or bending the spine, or riding in the cars, is painful. Faint spells and vertigo; severe headache at times. Nervous, low-spirited, and a poor sleeper. Short breath, palpitation, and a "drawing" feeling in the stomach. Poor appetite and digestion. Arms feel numb, and fingers feel as if asleep. Diminished sensation in arms and legs, and some tenderness of nerve-trunks in legs. Lumbar spine flat, slight lateral curvature to the right, tender below tenth dorsal vertebra, the tenderness being greater by the sides of the spinous processes. Reflexes and electrical reactions normal. No ataxia.

IV. Bateman C., 59, m., electrician. January, 1886. Some months before he fell from a ladder, striking on his buttocks. No loss of consciousness. Nausea and vomiting till two months ago. Costive. Since accident loss of power and prickly throbbing in legs, worse in right leg, which has wasted. Legs at times feel hot or cold, both subjectively and objectively. No distinct pain in legs. Water had to be drawn for a week after his fall. A month ago fell, rupturing a vessel in his knee, and the knee had to be aspirated. Right leg two inches smaller, marked diminution of sensibility. Muscles of thigh do not react to either current on right, and very feebly to strong galvanic current on left. Much fibrillary contraction of right quadriceps. Distinct gain under galvanism. With improvement in strength and sensation in legs has decided pain in them.

V. Jeremiah O'D., 50, m., carpenter. Consulted me in August, 1885, being anxious to get a pension on account of his disability. Was stabbed in the abdomen in 1865, and had peritonitis after it. In 1870 the pension board rejected his application, thinking his hemiparesis was the result of apoplexy, but he denies any history of apoplexy. On recovery from the peritonitis, the left leg began to be weak, and he had pain and stiffness in the left hip. He could not walk without staggering and getting exhausted. Hard to lift left leg up stairs. Severe pain in left side and abdomen, and left side of head. Depressed, poor memory, slight mental impairment, vertigo, and diplopia; some tinnitus. Numbness gradually developed over his entire left side, less marked in the hands and feet, but amounting in some places to absolute anæsthesia and analgesia. Tingling and prickling on left side. Smell impaired; poor vision in left eye from cataract, field not contracted; taste poor on left; hearing worse on left. Diminished tactile sensibility over entire left side; left arm a little smaller and weaker. Cannot put left leg into a chair without great effort. Sways with eyes shut. Knee-jerk and cremaster reflex most marked on right; knee-jerk weak. Speech rather indistinct. Slight tenderness over left posterior tibial. March, 1888: Question of pension still pending. Has not improved since 1885. Symptoms much the same. Still has anæsthesia, which is most marked on the left, although tactile sensibility is blunted on the right. Considerable difficulty in walking, drags left foot. Trouble in locomotion increased on trying to make any quick movement.

VI. Susan W., 46, m. December, 1886. Neurotic taint. Fell on the ice last winter, striking left hip and elbow and causing hernia. Now the slightest effort causes pain across the chest and in the back. Lifting causes a "hot water" feeling in the hernia. Very severe headache, impaired vision, and increase of deafness in left ear. Tinnitus. Short breath and pleuritic stitch. Weak stomach; very costive; frequent micturition. Considerable pain in the arms, numb feeling on left side; the

left hand and foot get cold readily. Staggers on walking, and the left leg gives out. Cramps in the legs; numbness, prickling, and pain in the left leg. Great spinal tenderness; tender over stomach and lower ribs on each side. Tender over left ulnar, sciatic, and posterior tibial nerves. Diminished sensibility in left ulnar region, over left chest, and on outer side of left leg. Electrical reactions normal. Knee-jerks exaggerated, front-tap contraction. Eyes and ears not examined. March, 1888: Worse since last seen. Pain in left side and back; prickly feeling all over body. Much vertigo. Pain in right foot. Poor vision. Very nervous. At times has much trouble in passing water. Troubled greatly with leucorrhœa and piles. Field of vision good, *vou* 20-50. Fundus normal. Cannot hear watch with either ear, or through bone. Marked opacity of membrana tympani. Cannot stand with eyes shut. Slight tremor of hands. Extreme spinal tenderness.

VII. Annie S., 45, m. Seen in consultation February, 1886, with Dr. E. S. Boland, who has reported the case in full.[32] Not neurotic. Two years before she was thrown down an embankment by the sudden starting of a train, and had recovered damages, although the case was still in dispute. Much pain in head and lumbar region, and considerable vertigo. Sleeps poorly and has a poor memory. Poor appetite; very costive; has had jaundice since the accident. At one time had xanthopsia, at another melanopsia. Menses irregular and painful. Urine scanty. Wets and soils herself at times. Very marked anæsthesia over whole body, with analgesia. Some sensation in tip of nose, left ulnar region, and right cheek. All muscular efforts slow and weak. Cannot stand without support. Muscles do not react well to faradism; knee-jerks weak. Field of vision contracted, especially in right eye; *vod*, can count fingers; *vos*, 2-20. Monocular diplopia, *od*. Pupils react sluggishly to light. Loss of smell and taste. Hearing to watch, contact *ad*, four inches, *as*. Gained under treatment for three months. Later right ankle became weak. When last heard from, in December, 1887, she was still far from well, being quite lame, and having much pain in her back.

VIII. Chas. L., 14, s., school-boy. Referred to me by Dr. Cutter, of Leominster, in May, 1886. Nervous heredity. Posthumous child, always nervous and irritable, had convulsions in infancy. Six years ago fell from a bridge, striking forehead. Signs of shock after it. "Shoulders drew up and spine got crooked." Delirious after fall, and very nervous since. Said to have lateral curvature, but it was not detected. Three years ago eyes began to trouble him, with dim vision and pain. Much headache, irritable, surly, and heedless. Poor appetite, chronic diarrhœa. Palpitation. Passes much urine. Rheumatic fever a year ago. Muscles weak, pain in legs with numbness and prickling in hands and arms. Fell again last fall, striking head. Worse since then, and has had two attacks: in one unconscious, rigid, trembled and screamed; sleepy after it. Two attacks of aphonia. Left leg said to draw up at times. Very fat. Field of vision normal, *vod* 20-20, *vos* 20-100, astigmatism of 4 D, *os*. Quite tender over spine, and more or less tender all over. Smell, taste, and hearing normal. Slight diminution of electrical sensibility on left. Knee-jerks only on re-enforcement. In June, 1888, reported to have had chorea, and after that to have had an increase of all his symptoms, with one or two more attacks.

IX. Chas. D., 12, s., school-boy. Mother consulted me in September, 1886, for an opinion in relation to a suit for damages. Not neurotic. Two years ago he fell down a coal-hole, striking head. Unconscious for a time, and delirious for several days. Scalp-wound, and question of depressed fracture. Headache and vertigo since; could not go up or down stairs safely, owing to vertigo. Violent headaches induced by any effort or excitement. Very forgetful, peevish, fretful, and sleeps poorly. Has had attacks of severe headache, with nausea, and "raving attacks," when he would call out various phrases referring to his accident, and would twist about, his limbs working. Exhausted after these. Sudden attacks of pallor and vertigo. Some diplopia and tinnitus. Capricious appetite; has not grown much or gained in flesh since accident. Slight furrow over right parietal, and cicatrix over occiput. Some spinal tenderness in upper dorsal region; jarring causes vertigo. Field of vision and tactile sensibility normal. Special senses unimpaired. No knee-jerks. Gradual improvement, but in December, 1887, was still subject to severe headache and vertigo on any exertion or excitement. No attacks since May, 1886.

X. Charles C., 61, w., machinist. June, 1887. No special taint. Eighteen months ago he was thrown from a wagon, and was unconscious for six hours and a half after it. No external injury or fracture. Hot-water bottles were put to his feet, burning them so badly that he was kept in bed for four months. On getting about, his shoulders and right leg began to feel heavy and his arms ached. His head has felt sore, and he has had sharp pains in it. Discouraged, low-spirited, and irritable, but mental power is not impaired. Short breath, poor appetite, constipation. Prickly aching and burning in the arms, which feel weak and heavy. The right leg feels numb and prickly, and both legs ache. He has pain and a hollow feeling in the back, which hinder his walking. Says he is growing worse. Marked myopic astigmatism, field of vision normal. Fibrillary tremor of tongue. It hurts him in the lower dorsal region to bend his spine, but it is not tender. Some inco-ordination of the left arm, and a little tremor of the hands. Speech a little thick. Epigastric reflex present only on left. Triceps, radial, ulnar, and patellar reflexes exaggerated. Slight patellar clonus; front-tap contraction. March, 1888: Condition not improved. Complains greatly of his back, and of inability to use his arms well. Numbness of both legs. No inco-ordination of hand. Reflexes exaggerated. No consciousness of events immediately preceding accident. Was thrown from a carriage fifteen years ago, and after that had some stiffness of left arm, which recovered. A year before his last accident, however, this arm had been rather weak.

XI. Dennis B., 37, m., printer. Referred to me by Dr. Post, in August, 1885. In January,

[32] E. S. Boland, Symptoms following Injury to the Head and Back. Boston Med. and Surg. Journal, 10th Nov., 1887.

1885, was struck by shafting, the right side being most injured. Right instep and right little finger broken; right thigh and leg much bruised. Laid up until May. Two weeks ago tried to go to work on a hot day, worked an hour and a half, and had to go to bed. Memory began to fail after injury, and he has had constant, severe headache ever since. Has vertigo so badly that his wife is afraid to let him go out alone. Forgetful since his injury. Very restless at night. Much more irritable and excitable. Considerable diplopia. Slight palpitation and shortness of breath. Poor appetite, some vomiting. At times has to wait before he can pass water, and at times the stream stops. Cannot close right hand as well. Frequent and severe pain in right leg after using it, and constant numbness and prickling. Right leg weaker, somewhat wasted, and is easily fatigued. After his attempt to go to work, was in bed for a week; headache and vertigo much worse, felt dazed, and has been more or less confused; had constant nausea and vomiting for a week. Field of vision good, *vod* 20-20, *vos* 20-30, left disk paler. Some weakness of external recti, with nystagmus on excursion outwards. Other senses and tactile sensibility unimpaired. Arms strong, no inco-ordination, some tremor of hands. Right leg smaller than left, vastus internus does not react to faradism, lower leg muscles require a stronger current than on left. Nerve-trunks in right leg rather tender. Reflexes normal. About a year later the man died. There was no autopsy

XII. Wm. M., 49, m., engineer. Consulted me in March, 1887. Gonorrhœa. Considerable tobacco, little alcohol. Struck by a stone from a blast twenty years ago, breaking right forearm and thigh, and cutting radial nerve in upper arm. Anchylosis of right elbow joint. Arm has been partly paralyzed since. Ever since accident has been nervous, "shattered." Sleep is very restless; feels unstrung. Any excitement or any considerable exertion uses him up, and makes him sweat profusely. Considerable vertigo. Easily put out of breath. Some "rheumatic" pain in legs. Cannot move right arm at shoulder much, or at elbow at all; can flex and spread wrist and fingers, but cannot extend them; supinates a little, pronates well. Arm two or three inches smaller round; muscles wasted, do not react to faradism. Diminished sensibility in distribution of radial nerve. Sensation, motion, and reflexes elsewhere normal. March, 1888: Condition much the same. The pain in the legs is of rather recent date, and is of a rheumatic character. He is able to work, but since his injury he has been of a nervous, unstable disposition. Before it he could stand anything; since, everything excites him very much, and makes him very nervous.

These last two cases are of further interest from the fact that Erichsen[33] claims that when injury produces fracture of any bone, the nervous system is apt to escape from the effects of concussion, the violence of the shock expending itself in producing the fracture. These cases, as well as a good many others that have been reported, show at least that Erichsen's rule is not without exceptions.

These cases certainly present divers groups of symptoms which demand a little consideration. The commonest among them point to some cerebral disturbance. Eight had headache or pain in the head, and eight had vertigo; ten had some psychical disturbance, nervousness, restlessness, irritability, inability to make prolonged effort, depression, anxiety, loss of memory, and, in at least one case (XI.), distinct mental impairment; two (VIII. and IX.) had some sort of convulsive seizure; one only (IX.) seemed to have been affected by any terror, and in him the effect was slight.

Motor disturbances were not uncommon. Seven patients had muscular weakness, which sometimes amounted to actual paralysis, although chiefly when there was neuritis. Several had tremor; two (V. and VI.) Romberg's symptom; and one (X.) inco-ordination. Several had muscular wasting, and four diminished electrical excitability, chiefly from neuritis. The knee-jerks were increased in three cases, diminished in three, and absent in one.

Sensory disturbances were less common. In only four cases was there poor vision, due generally to definite causes independent of the injury. In three cases the other special senses were impaired, generally on one side. Three patients had diplopia, and one (XI.) nystagmus. One (VII.) had monocular diplopia, sluggish pupils, and xanthopsia; the last symptom was noted in one of Oppenheim's cases. Contracture of the field of vision was found but once, but in a few instances the fields were not examined. Anæsthesia in varying degree was noted in seven cases, due, in two at least, to neuritis. In four of these seven cases, and in two others, there was paræsthesia. In no case, unless possibly in Case VIII. was the anæsthesia strictly unilateral — hemianæsthesia.

Digestive disturbances were occasionally seen, and in five cases there were vesical symptoms — signs of paresis of the bladder. Two men reported impotence.

Pain in the back was found in seven cases, and several others had pain in the side, limbs, or abdomen. The pain in the back was usually associated with tenderness over the spinal muscles and was increased on motion. In a few instances it was associated with tenderness over the spinous processes.

What is the cause of such an array of symptoms? Is there "only hysteria, nothing but hysteria"? Is there merely a strain of the muscles of the back, with neurasthenia added to it? Is there merely a functional derangement, or is there some structural change in the nervous system? Of course it is not possible to find any one diagnosis to fit so many different cases, but these cases and their attendant symptoms may furnish us with some data to aid in considering the whole subject of so-called "concussion of the spine."

(To be continued.)

[33] J. E. Erichsen, *op. cit.*, p. 73.

A contemporary presents a study of the intellectual men of the British Islands by Dr. Boyle, which gives some interesting figures. Applying the same standards, he finds that one Englishman in thirty-one thousand rises to distinction; one Scotchman in twenty-three thousand; and one Irishman in forty-nine thousand. Edinburgh has three times as many famous men in proportion to population as London. As a whole Scotland holds the palm of intellect, while Ireland as a whole is lowest.

A CASE OF RUPTURE OF THE URETHRA, WITH SOME REMARKS UPON THE SYMPTOMS AND TREATMENT OF THAT INJURY.

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RUPTURES of the pendulous portions of the urethra are rare, are not apt to be extensive, nor, although troublesome in regard to treatment and cure, are they usually dangerous. In the cases which I have seen the rupture has occurred during sexual intercourse, and has been accompanied by immediate pain and swelling followed by ecchymotic discoloration of the entire pendulous portion of the penis and by more or less severe hæmorrhage from the meatus. They have all done well under the use of evaporating lotions and rest followed by gentle catheterization after the blood has disappeared and the swelling subsided. Ruptures affecting the deeper portions of the urethra are, however, much more serious. Excluding those which result from instrumental violence, that is, false passages, which I do not propose to consider in this article, they are caused almost invariably by some form of traumatism applied to the urethra, most of the examples which have come under my own notice having been the result of falls astride of hard or resistant bodies. The mechanism of rupture of the urethra has been variously explained. Franc, Velpeau, and Poncet have attributed the urethral laceration to the crushing of the membranous portion of the urethra between the offending body and the lower border of the pubic arch. If the accident occurred with the patient in a leaning position, the body directed forward, they believed that the posterior part of the spongy urethra could be crushed against the pubis; and think that when the force which produces the injury acts in the lateral direction the urethra is more probably pressed against the upper portion of the descending pubic ramus. Ollier refers lacerations of the membranous urethra to the pressure of the canal against the sharp edges of the sub-pubic ligament, which in his experiments seemed to have divided the upper wall of the urethra. Terrillon believes that when the body which is fallen upon is narrow the urethra is crushed against the ramus of the pubes, and thinks the injury is likely to be found about the region of the bulb; and when the fall is upon a broader substance the urethra is crushed against the anterior surface or inferior edge of the pubes and the lesion is found more anteriorly. Guyon says that in this accident, whether the cause is a fall or a blow, the mechanism is the same: the urethra and the soft parts which immediately surround it are pressed and crushed against the resisting pubic symphysis, whilst the superficial tissues, more supple and more elastic, escape or are scarcely involved. He believes, as does Terrillon, that such ruptures are frequently only partial, and that they are commonly situated in the spongy part of the urethra, an inch or less in front of the anterior layer of the triangular ligament, and in this opinion he is supported by Iversen, who has recently analyzed twenty-nine cases of this accident. Duplay thinks that in a certain proportion of cases the urethra is ruptured by a temporary dislocation of the symphysis pubis, the soft bones springing back into their proper relation after the crushing force is removed and leaving no trace of the accident except the urethral lesion. He thinks that this ("rupture by traction") may also occur in case of fracture of the pelvis with a displacement of a portion of the pubic arch; and it is of course evident that the urethral wall could be wounded directly by a fragment of bone after such a fracture.

In attempting to diagnose a rupture of the urethra we must depend chiefly upon: 1, the history of the accident; 2, the phenomena connected with urination, which is usually difficult or impossible; 3, the appearance of blood either at the meatus or beneath the skin or in both situations; 4, the development of a swelling due to extravasated urine.

As in the majority of cases all these symptoms are present, the diagnosis in general terms of a rupture of the urethra can hardly be said to be difficult, but in exceptional cases, where one or more are absent, it may be a matter of great uncertainty. So, too, the recognition of the precise seat of the rupture may be comparatively easy if the case is a simple and an uncomplicated one, or, under some circumstances, may be almost impossible. The following case will serve to illustrate this point: —

A laboring man, aged twenty-five years, was admitted to the University Hospital on the morning of May 9th, 1888, with the following history. The previous day he had placed his foot accidentally upon one edge of an iron girder covering a man-hole in the deck of a vessel, tilting it into an upright position and alighting astride of it. The accident occurred about seven A. M. About two P. M. he endeavored to urinate for the first time, and found that it was impossible to do so. Before making the attempt he noticed and wiped away a small quantity of clotted blood from the neighborhood of the meatus. He repeated the effort at short intervals during the afternoon, suffering increasing pain and distress, and toward evening noticed swelling of the scrotum, which rapidly increased. He applied to a physician for relief, who gave him some powders, but made no attempt at instrumental interference. He suffered greatly during the night, and early the following morning came to the hospital. At this time the scrotum was swollen, tense, ecchymotic, and œdematous, the upper portion of the right thigh was similarly affected, and the left thigh to a very slight extent; there were perineal swelling and discoloration. He had absolute retention of urine, and was at this time unable to pass a drop. Catheterism was performed with some little difficulty by the resident physician, who withdrew thirty-six ounces of clear urine and left a soft catheter in the bladder, and by my directions made free incisions in the scrotal tissue to relieve tension. I saw him about three hours later, and found him in a condition of shock, with evidence of continued extravasation of urine. I proceeded at once to operate. First having him etherized and placed in the lithotomy position, I made a free incision in the median line of the perineum and sought for the laceration in the neighborhood of the bulb, where, on account of the swelling in the scrotum, I expected to find it. I laid open the successive planes of tissue, separated

the accelerator urinæ muscles, and exposed the urethra for the distance of an inch or two. As I failed in this way to recognize the site of the lesion, I placed my finger posterior to the bulb and had the anterior part of the urethra injected with warm water. The urethra in front of my finger become tense and distended with the liquid, showing that there was no outlet in the canal anterior to the triangular ligament, and I therefore conducted my search further backward. After considerable difficulty I found, situated in the left lateral aspect of the membranous urethra, and therefore between the two layers of the triangular ligament, a small rent through which with my finger nail I could touch the edge of a metallic sound which I had passed into the bladder. On still further examining the parts I found a laceration of the anterior portion of the triangular ligament itself, situated to the right of the median line, through which the probe passed in the direction of the urethral laceration. To the left of the latter, and extending up towards the apex of the prostate, was a cavity which would receive the tip of the little finger, and which contained a moderate quantity of blood clot. I cleaned this out, irrigated the whole wound, placed a rubber drainage tube with its upper end in the cavity at the side of the laceration, passed a soft catheter into the bladder, and tied it into position with tapes, dressed the wound with iodoform, and filled it loosely with sublimate cotton. I then applied a T bandage, and, as the patient had considerable shock, gave him a hypodermic of whiskey and digitalis and had him covered with hot blankets, and a hot poultice applied to the whole abdomen. He soon reacted and recovered rapidly and uninterruptedly.

In this case there could be from the beginning no question as to the character of the accident. The appearance of blood at the meatus, the retention of urine, the ecchymosis and extravasation, when taken in connection with the severe accident, clearly pointed to a urethral laceration, but the exact seat and character and extent of that laceration were not so readily determined. It was perhaps safe to assume, on the one hand, that it was not of the character described by Duplay as "interstitial rupture," in which the spongy tissue alone is involved while the mucous membrane and exterior fibrous envelope escape injury, nor of the variety in which the mucous membrane and sub-mucous tissue only are lacerated. While these injuries would account for the retention of urine, they would fail to explain the extravasation which occurred within ten or twelve hours of the accident, or the seat and extent of the ecchymosis. On the other hand, the fact that catheterization was possible with no very marked difficulty, would seem to show that the case was not one of complete rupture of the urethra, with the separation of the torn ends which usually occurs in that accident. The interval which elapsed between the injury and the signs of extravasation was also greater than is usual after cases of complete rupture. For these reasons it seemed probable that I had to do with a case of laceration of a portion of the urethral wall of not very great extent. The interesting question as to the seat of the laceration still remained. The anatomical peculiarities of the part explain the usual course of urinary extravasation. The urethra may, for example, be divided into four regions. In all that part from the meatus to the scrotal curve, extravasation is accompanied by a swelling and discoloration of the penis, greatest in the immediate neighborhood of the injury.

In the region included between the attachment of the scrotum and the anterior part of the bulb, the course of extravasated blood or urine is governed by the attachments of the deep layer of the superficial fascia or fascia of Colles. This is attached to the sides of the pubic and ischiatic rami, and behind, after dipping over the edge of the transverse perineal muscles, it is attached to the base of the triangular ligament, becoming continuous at the posterior edge of that ligament with the pelvic fascia, where it blends with the posterior layer of the triangular ligament. This fascia of Colles is continuous with the dartos tissue of the scrotum, and extends upwards to the abdomen, being attached in the middle line to the symphysis and on the outer side to the fascia lata, just beyond Poupart's ligament, leaving a space between the symphysis and the spine of the pubes, to which it is not firmly fixed; it then becomes continuous with the deep layer of the superficial fascia of the abdomen. Extravasation of urine occurring through laceration in the bulbous region of the urethra will first follow the space inclosed by this fascia in front and below to the anterior layer of the triangular ligament posteriorly, and, as it cannot reach the ischio-rectal space on account of the attachment of the fascia to the base of the ligament, and cannot reach the thighs on account of the insertion of the fascia into the ischio-pubic line, it is directed into the scrotal tissues, and thence up between the pubic spine and symphysis until it reaches the abdomen. I have seen cases in which, from neglect to provide an outlet for such effusions, not only the entire scrotum, but the whole of the soft parts of the lower portion of the hypogastrium had sloughed away; and such cases have frequently been recorded. If the injury affect the membranous urethra alone, the surrounding structures not being involved in the laceration, the extravasated urine would be confined to the region included between the layers of the triangular ligament, and would only gain access to other parts after suppuration and sloughing had given it an outlet.

The consecutive symptoms would then depend upon the portion of the aponeurotic wall which first gave way.

If the injury is situated behind the posterior layer of the triangular ligament, *i. e.*, in the prostatic urethra, the urine may either follow the course of the rectum, making its appearance in the anal perineum, or, as it is only separated from the pelvis by the thin pelvic fascia, it may make its way through the latter near the pubo-prostatic ligament, where it is especially weak, and may spread rapidly through the subperitoneal connective tissue. According to Iversen, the external swelling is usually absent, and the above occurrences are to be suspected from the severity of the symptoms. In the case just described, it is evident that the conditions which were found were attributable to no single one of these four typical forms of laceration, as we had perineal swelling, extravasation

upon the thigh, and scrotal and abdominal extravasation coexisting. After the dissection the explanation became evident. The rent was a small one, and no large amount of blood was effused to cause immediate pain or uneasiness; no marked symptoms were produced at all, until, during the first attempt at urination, a portion of the urine escaped into the cellular tissue to the left of and beneath the membranous urethra. As repeated attempts were made, this found for itself a way into the perineum, passing laterally below the attachments of the fascia of Colles and through the rent in the triangular ligament, a portion reaching the right thigh, and a still smaller quantity the left thigh, the greater portion distending the scrotum and mounting upwards to the abdomen. The fact that the tear in the triangular ligament and the perineal fascia was on the right side, explains the greater degree of extravasation in the upper portion of the thigh of that side.

The important question of treatment in these cases may be simplified by adopting a classification similar to that employed by Guyon and Duplay, which is based upon symptoms rather than upon the anatomical seat of the injury. All cases may be divided into three classes, mild, moderate, and grave. In mild cases, *i. e.*, in those where after such an injury there is an appearance of blood at the meatus, with difficult urination or with retention, but with no evidence of extravasation, and no general alarming symptoms, and in which catheterization is easy, the surgeon may be content with regular evacuation of the bladder, by means of a soft instrument, well greased with carbolized oil, and with prescribing absolute rest, the patient being carefully watched for the onset of fever, or the appearance of local swelling. In cases of a more severe type, in which, in addition to urethrorrhagia and retention of urine, there are evidences of extravasation, and in which catheterism, though difficult, is possible, it is wisest to leave a full-sized catheter in the bladder, and at the same time freely to lay open the perineum and scrotal tissues, or any which have been involved in the extravasation. In cases of greater gravity, in which catheterism is impossible, careful perineal section should at once be made, the rent in the urethra sought for, and a catheter passed through it into the bladder. This is sometimes one of the most difficult procedures in operative surgery, particularly if it has been delayed until inflammatory changes, or local gangrene, have altered the appearance and relations of the parts involved. If persevering and careful search fails to reveal the proximal end of the torn urethra, I believe that the supra-pubic cystotomy, for the purpose of retrograde catheterization, is justifiable, the anterior urethra being almost always discoverable. Except as to the latter point, surgeons, as a rule, are agreed upon the above-described methods of treatment, and a number of them, including Iversen, endorse the propriety of the supra-pubic operation in such cases. The case above described belongs to the second class, or those of moderate gravity, and I know of no point in the treatment which would be considered open to reasonable discussion. It may be said that as the introduction of the catheter was effected with comparative ease, it would have been better to empty the bladder at periodical intervals, rather than run the risk of continued extravasation by the side of the instrument left *in situ*. Birkett and others have shown, however, and the experience is one familiar to every practical surgeon, that while catheterism at a given time after any injury to the urethra, whether accidental or operative, may be easy, the lapse of a few hours may render it difficult or impossible. This would at once transfer the case to the third class, and would greatly reduce the patient's chance of recovery. In cases of complete rupture, after the introduction of the catheter, I should certainly be inclined to follow the course recommended by Erasme, who details the following indications as undoubtedly existing in such cases: 1st, to open a large passage for the accumulating fluids; 2nd, to keep up a free flow of urine; 3rd, to encourage rapid union of the two ends of the urethra and the walls of the cavity formed by the extravasation into the perineum; 4th, to prevent the formation of a cicatricial stricture of the urethra. He briefly reviews the different methods which have been recommended: supra-pubic aspiration (Lefort, Molliere) is palliative, and meets none of the indications; external urethrotomy (Guyon and others) does not provide for prompt union of the canal, and does not prevent consecutive contraction. Antiseptic measures carried out by allowing an elastic catheter to remain in the perineal wound, which is tamponed, or by suturing its borders produce more rapid union, but are likewise followed by urethral coarctation. The stitching of the proximal end of the urethra into the wound, and catheterizing only after healthy granulations have formed, while reducing risks to the life of the patient, is followed by the same results.

Erasme concludes that immediate union of the two ends of the torn urethra is the result to be aimed at; quotes the results obtained by Kaufmann, of Zurich, in experiments on dogs, which were very successful, and details a case of his own in which, after a fall upon a cask, a man aged thirty-eight years had a rupture of the perineal urethra. The two ends, when discovered by dissection, were separated from a third to half an inch. A large English catheter was introduced, and the two ends of the urethra brought well together with cat-gut stitches inserted so as not to include the mucous membrane. The transverse perineal muscles and the others which were divided were then brought together by sutures, as well as the more superficial tissues. The patient had no fever; almost no urine passed by the wound (not a drop after five days); in about seventeen days the wound was entirely healed; in three weeks a sound went easily into the bladder, no obstruction being felt, and the patient was discharged, to report for future examination.

He prefers this method of suturing to that recommended by Kaufmann, who placed his stitches first in the mucous membrane, tying them in the interior of the canal. He thinks early operations through tissues not yet inflamed or infected far preferable to those performed later; gives the following statistics of mortality: early perineal incisions, 8.79 per cent.; hypogastric aspiration, 19.04 per cent.; late perineal incision, 20 per cent.; and hopes that

early suturing will show still more favorable results.

On the evening of the same day, May 9th, a case was admitted to the German Hospital, where I was also on duty, with the following history: The patient, a man aged forty years, was caught between the bumpers of two freight cars, which squeezed him severely, pressing upon the outer surface of the crest of the ilia, the soft parts below them, and the great trochanters; these regions on both sides being considerably bruised and abraded. He immediately had great pain, which he referred to the body of the pubes on the right side and behind it. After his admission to the hospital distinct crepitus was found. When brought in he was in a condition of severe shock, had a swollen, tense, and tender abdomen, and was unable to void his urine. An English catheter was introduced with much difficulty, and an ounce and a half of bloody urine was withdrawn, and I was telephoned to for instructions. I directed that the man be allowed to remain without catheterism for three hours, during which time hot poultices were to be applied to the abdomen and the general treatment of shock instituted. At the end of that period catheterism showed that urine to the extent of four ounces had accumulated in the bladder and was slightly less bloody. His general condition had somewhat improved. As each introduction of the catheter had been followed by increased bleeding, the blood appearing at the meatus, I had a catheter left in the bladder continuously. There was no perineal or scrotal swelling.

The question of diagnosis at this time lay between a rupture of the bladder and a laceration of some portion of the urethra. I discarded the former hypothesis on account of the amount of urine which the bladder would retain, the disappearance of the blood from it after the catheter was tied in, the absence of progressive shock or peritonitis or pelvic cellulitis, and the appearance of blood at the meatus. I believed the case to be one of laceration of the urethra, resulting either from direct injury by a fragment of broken bone, or from the stretching and tearing of the urethra on account of the displacement of the pubis at the time of the injury, the fragment dragging upon the sub-pubic and triangular ligaments and by these means tearing the urethral wall. This diagnosis was apparently confirmed by the slow appearance of a discoloration which first affected the scrotum, then the lower portion of the abdomen above the pubis, and finally the upper part of the thighs, stopping a little below Poupart's ligament and evidently outlined by the attachment of Colles' fascia. This would on anatomical grounds indicate that the site of the injury was somewhere in the bulbous portion of the urethra. This view was sustained by the appearance of blood at the end of the penis. I believed the ecchymosis to be referable to the urethral lesion rather than to the fracture on account of its course. If it had been the usual effusion of blood due to fracture, it would probably have appeared first in the neighborhood of the broken bone and would not have begun in the scrotum and gradually ascended. The case was of course complicated by the fracture, and so far as the urethral lesion was concerned may be said to belong to class first, or the mild cases in which catheterism and rest, or at the most the continued retention of the catheter, meet all the immediate indications. The patient's temporary escape from extravasation was probably due to the fact that, on account of his graver injury, he had made no effort to urinate until his admission to the hospital, when it was discovered that he was unable to empty his bladder and catheterization was immediately resorted to. The ecchymosis showed that the rupture, although largely interstitial or submucous, was at the same time complete, blood escaping into the urethra and also around it.

This patient steadily improved for a time; all blood disappeared from his urine; he retained several ounces of urine; his belly became flat and soft, and his pulse and temperature normal. Deceived by these occurrences, and fearing cystitis from catheterism, I ordered the latter stopped. In forty-eight hours he became worse, in a day or two more showed increased swelling with crepitation at the groin. An opening which I made readily penetrated above the broken pubes into the pelvic cavity and evacuated a large quantity of pus and urine. It was evident then that there had been a small wound or tear in the bladder, the edges of which had adhered and were undergoing repair so long as the bladder was kept empty by catheterism; but which separated and permitted extravasation to occur when the urine was allowed to accumulate. The patient's general condition contraindicated operation, and he died in a few days in spite of careful and thorough drainage and frequent antiseptic irrigation. An autopsy revealed a small rent in the bladder and another in the bulbous part of the urethra; an immediate laparotomy, performed within a few hours of the accident, would possibly have saved this patient; but on reviewing the symptoms I cannot think that they justified this procedure. The peculiar course of the case undoubtedly arose from the circumstances that the rent in the bladder was a very small one; that its edges lay in such close apposition; and that there was also a partial rupture of the bulbous urethra,—a group of conditions whose coexistence must be rare. The results of laparotomy for intraperitoneal rupture of the bladder, as shown in the cases of MacCormac, Holmes, Halstrom, Grant, Blum, and others, is in the highest degree encouraging,—seven out of sixteen cases having recovered; while in eight of the nine fatal cases the average time between the operation and the injury was twenty-eight hours, and in the ninth case the vesical sutures were faulty. In Blum's case recovery ensued though the operation did not take place until forty hours after the rupture. The *Medical News* makes the editorial suggestion that, in view of the frequent uncertainty when the quantity and character of the urine are depended upon as the chief diagnostic signs, it would be well to add to our present tests for the occurrence of vesical ruptures the gentle introduction of hydrogen gas into the viscus, noting whether it distended merely the bladder itself, went into the surrounding tissues producing emphysema (extra-peritoneal rupture) or distended the general peritoneal cavity (intra-peritoneal rupture). The test seems to me a practical one, and in the above case might have established the diagnosis in time to permit of successful operation.

FÆCAL ACCUMULATION.

BY ELBRIDGE G. CUTLER, M. D.

1. A YOUNG woman, twenty-two years of age, had pleurisy with effusion about two years ago; some three quarts of serum were removed by tapping. The lung appears never to have wholly expanded, and she has suffered from cough and expectoration ever since. Of late she has had fever, loss of flesh and strength, loss of appetite, and has failed considerably. For the past month has had a diarrhœa which has resisted all remedies used to check it, and it was for this that she sought advice. The movements were described as frequent, involuntary, dark, watery, having a bad odor, and accompanied by considerable slime. It was learned that she had been using a morphia suppository twice a day for a long time. Physical examination of the chest showed an advanced phthisis, and the sputa contained bacilli. The abdomen was full and rather prominent on the left; it was somewhat tender on palpation in the same locality, and a number of small lumps could be felt inside, the size of a hen's egg or larger; at the same time there was a general fullness of the pelvis. The lumps were arranged in a row in the region of the descending colon, and were considered to be perhaps fæcal masses, and it was thought that the sigmoid flexure was probably packed. Rectal examination confirmed this view. She was treated by enemata, and after several days of patient washing she was relieved of a large number of hardened lumps and soft fæces, and the bowels became natural. The symptoms for which she had summoned aid were ended; subsequent care has kept her free from trouble thus far.

2. Not very long since a man about thirty-five presented himself, saying he suffered considerable pain in the right inguinal region, which kept him from walking erect, and prevented sleep. He had suffered several days, and had been somewhat constipated for quite a while. An examination of the abdomen revealed a somewhat prominent belly, with percussion resonance everywhere except in the right inguinal region, in an oval space three inches in diameter. Tenderness was a marked feature, and was so great that the percussion had to be very gentle. Palpation showed the tumor to be somewhat larger than was believed on percussion; its boundaries were sharply defined and regular, and it was thought to be confined to the region of the cæcum. The temperature was 101½° Fahr., pulse 90. It was believed that he was suffering from typhlitis, and he was therefore sent to bed, and a few large oily enemata were cautiously given, which soon brought away a considerable mass of fæces, and caused the tumor to diminish very much in size, and abolished the pain. A few days later he felt so much better that he got up and went out, but within a month returned to me in the same condition as at first. A repetition of the treatment, and subsequent care in following out directions as to the treatment of the bowels, brought him to his natural condition of health. I have since seen him twice walking on the street, when he has assured me that he has remained perfectly well.

[1] Read October 8th, 1888, before the Boston Society for Medical Improvement.

A very similar case I saw last winter in the outpatient department of the Massachusetts General Hospital.

3. Mrs. S., about forty years old, had been under treatment for some uterine difficulty, and having been relieved of that, she was referred to me as possibly having typhoid fever. She complained of a sensation of great heat, pain in the head, sweating, anorexia, chills, extreme feebleness, and feeling of faintness on attempting to sit up. The pulse was rapid and feeble, temperature 101½°. The face was flushed, the eyes were dull, appearance despondent. Under simple treatment she was nearly well in a few days, when some paroxysms of pain in the left hypochondriac region led me to examine the abdomen very carefully. I then found some hard round masses on the left side, apparently inside the intestine. To bring these away an enema of soapsuds, castor oil, and vinegar was ordered. This was given by a midwife. The patient was much exhausted by the process, and only a little hardened fæces was brought away. Paroxysmal pain of great intensity followed, and after several times repeating the enema, evacuation of all the fæcal masses followed, with complete relief. The masses were half the size of the fist, and as "hard as rocks," as the patient described them. Seen by me they certainly were very hard, and seemed to consist of masses of dried fæces.

In looking over a considerable number of reported cases, I find that the affection is met with far more frequently in women than in men. The causes of the fæcal accumulation in these cases were constipation (in a very large proportion), pregnancy, dilatation and pouching of the rectum or colon, vaginal rectocele, presence of an ulcer or fissure causing pain, hæmorrhoids, congenital smallness of the anus (Matthews Duncan reports the case of a valve-like obstruction about one inch within the external orifice of the anus), cicatricial contraction following too thorough operation for piles, rectal scybalum, tumors inside and outside the bowel, bands outside, cicatricial contraction outside, malignant, lupus, syphilitic, catarrhal contractions, hernia, pessary in the vagina, foreign bodies of all sorts in the colon or rectum.

The diagnosis of fæcal accumulation is frequently very difficult. If a tumor exists it may be and often is mistaken for anything but its true character. The tumor may be either hard and consistent, or, to a certain extent, soft, with a smooth even surface capable of being easily indented. When hard it is often irregular, elongated, and may consist of several balls, such as were found in cases 1 and 3.

The presence of an increased amount of indican in the urine is available for diagnosis in certain cases only, and as the increase may be found in stasis of the small intestine, due to any cause, as well as in cachectic conditions, and as tumor without stasis may occur, its field of usefulness is very limited.

The tumor may sometimes be located by the cautious slow injection of air into the gut by means of a Davidson's syringe attached to an English catheter or rectal tube, passed several inches up.

The effect of high enemata is probably the best

means of arriving at a diagnosis, and it is rarely the case that they cannot be used.

The fæcal tumor is by no means constant in these accumulations, for a very considerable amount of matter may be present in the colon without a defined tumor being formed.

Thus Blakiston[2] reports a case in a short, fat man, where no tumor could be felt, but a general hardness existed, and where appropriate treatment gave the man an "enormous evacuation." I have met with the same thing in a patient who was habitually constipated. There was merely an unusual density of the abdomen to the touch. After the first rather dry movement was secured, a mass of fæces, both hard and soft, was passed at once, which more than half-filled a large tin slop pail, much to my own surprise and that of the patient.

Fæcal tumors appear to be most common in the sigmoid flexure, at the apex of the loop, then in the descending colon and about the flexures, and least frequent in the ascending colon. The cæcum, said to be the seat of temporary accumulation[3] more usually, nevertheless sometimes has the chronic tumor. I found the case recorded of a girl of fourteen, who had had enlargement of the right side of the abdomen since the age of two, and the tumor, which was finally found to be fæcal, was in this region.[4]

Another case was that of a woman in whom the tumor was found some time after confinement in the right iliac region.[5]

The changes in position which are frequently observed may depend on progress of the mass along the colon, but more usually, I fancy, are due to changes in the position of the coil of intestine in which it lies. Such changes of position are more apt to be observed where the mass is in the loop of the sigmoid flexure or in the transverse colon. The changes in shape and size may be either real, by addition to its bulk, or apparent from the changes in position above mentioned, or from a subsidence of gas in its immediate neighborhood allowing the mass to be reached by palpation. The mass has also been seen to soften. The most irregular masses are those found in the descending colon or sigmoid flexure, and appear to be due to moulding in the sacculi of the gut. Ulcerations of the mucous membrane, which sometimes occur, have proved serious complications, but have only been superficial in the cases which I have seen. These ulcerations are not necessarily accompanied by tenderness; in fact, in one case reported, where ulceration was very marked and death occurred, tenderness was not felt.[6]

The diarrhœa which is frequently mentioned as alternating with constipation appears to be due to catarrh set up around and above the accumulation, and is no evidence of ulceration, or it may be due to liquid from above finding its way through channels or around the sides of the mass.

Treves[7] made a careful and systematic examination of the abdomen in one hundred fresh bodies, paying special attention to the viscera in those who had been the subjects of chronic constipation. In a large proportion of these there were no gross changes other than those incident to simple distension of the colon. In some there was a narrowing of the large intestine at the splenic, and less frequently at the hepatic, flexures, due to local peritonitis. This inflammation, where it had not produced some degree of stenosis, had rendered the bowel fixed and had evidently hampered its movements. The parts of the larger bowel that were most conspicuously involved were the cæcum, the sigmoid flexure, and the transverse colon. The cæcum was large, sacculated, lying free in the peritoneal cavity, and often hanging as a pendulous bag in the pelvis. In rarer instances it had been distorted by adhesions and even somewhat bent upon itself. The most frequent deviations from the normal were in the sigmoid flexure. The flexure was usually longer than the normal standard, and it was very common to find that adhesions bound down that bend in the colon at which the flexure and the descending colon meet. It was also common to find that a contracting peritonitis had involved the root of the sigmoid meso-colon, and had led to a considerable approximation of the ends of the loop. In other instances, chiefly as the result of peritonitis of the meso-colon, the "omega" loop had become considerably dilated. It is obvious that these various deformities would greatly impede the progress of fæces along the bowel. The transverse colon, Treves states to average twenty inches in length in the adult, the extremes being twelve and thirty inches respectively. An elongation of this part of the bowel is a frequent feature in chronic constipation. In certain cases the central portion of the transverse colon descended towards the pelvis, and the colic arch had assumed the outline of the letter V. The apex of this V-shaped loop may be found at the symphysis pubis, or even in the pelvis, and in one instance it had formed an attachment to the bladder.

The chief complication which is to be feared, happily very rare, is acute obstruction which may occur from blocking up of the channel or from twisting or flexion of the tumor.

Fæcal poisoning is another complication which at times may prove a serious condition. This was fully described by Dr. R. M. Hodges in a paper before this society last winter. Abscess is yet another, and is apparently due to the ulceration set up around the mass.

These accumulations are to be treated locally, and it is a mistake usually to give cathartics at first. Enemata are doubtless the most efficient means known of dealing with fæcal accumulations. The injections should be copious, and should be given where possible in the knee-head, knee-elbow, or lateral position. The best material is water at a temperature of about 100° Fahr., though there is no objection to soap and water, or turpentine and water, or oil. It is advisable to dispense with the use of an anæsthetic, unless the mass is situated low down in the colon, within easy reach from the outside, as the patient's sensations are often of great service as a measure of the force to be used, or the amount injected, and the presence of deep ulcerations cannot frequently be excluded. The fluid, enough to fill the colon, should be slowly introduced and be retained for some fifteen minutes, and the mass be

[2] Medical Times and Gazette, 1874, p. 46.
[3] Treves, Lancet, 1885, vol. ii. p. 1135.
[4] Heslop, Lancet, 1871, vol. i. p. 647.
[5] Lancet, 1874.
[6] Times and Gazette, 1872, vol. i. p. 308.
[7] Lancet, 1885, vol. ii. p. 1181.

kneaded gently. The best instrument, according to Treves, is the inflator designed by Mr. Lunt,[8] of Manchester, England, as it allows of very large injections without permitting the escape of any fluid from the anus. By its use such enemata can be given without assistance. I have used the ordinary syringe stem with a rubber shield shaped like a doughnut, the central hole being quite small.

Where the seat of the tumor is the cæcum, and accompanied by tenderness and fever, the procedure advised by Harley seems to be the best. After a fair amount of fæcal matter has been brought away by the enemata, given every six or twelve hours, he causes the patient to take half an ounce of castor oil, with two teaspoonfuls of brandy, and eight or ten minims of laudanum or deodorized tincture of opium, and repeats the dose after each evacuation produced by the enemata. In this way two or three fæcal motions are produced daily, to the great relief of the patient. The tumor decreases and becomes less tender daily, and in cases of ordinary severity the cæcum will be emptied in the course of one week, and the patient restored to convalescence. Where there is much pain, a hot flaxseed and mustard poultice should be kept applied to the abdomen. The subsequent treatment should be that of typhoid fever, and for one week or more after all pain and febrile disturbance have ceased there should be no solid food given. If the case is severe and protracted there is a tendency to reaccumulation in the cæcum. To avoid this an occasional dose of castor oil should be given, a compress worn with a flannel bandage over the region of the cæcum, and massage be made over the part. Strychnia in some tonic infusion may be given to promote tone in the weakened intestinal wall.

Where the accumulation is in the rectum, it is sometimes necessary to dig it out with the handle of a spoon or the fingers. A device described by Duke[9] in the British Medical Journal would appear to be serviceable at times. It consists of a brass, nickel, or silver-plated speculum armed with a plug, which when pushed forward allows fluid to be injected into the gut through a hollow pipe at the side. He thus describes its use. The speculum is gently introduced, and when placed the plug is pushed up, which raises the cover and allows the fluid injected to penetrate the mass or accumulate above it as the case may be. The mass is thus either broken up or soaked and its removal facilitated. When all has passed which will, and still large, hard, lumps present, and form a ball valve which want of tone in the bowel and abdominal parietes does not allow of the patient being able to expel, he supports the abdomen with a tight roller, and introduces as large a cylindrical vaginal speculum as will pass through the sphincter, and breaks up through it what will not freely pass, by means of a spoon handle. This he thinks saves much pain and the frequent introduction of the fingers, which produces so much subsequent soreness and discomfort.

After the mass has been cleared away the case is resolved into treating the condition on which the accumulation has depended, if it be possible to make it out.

[8] Lancet, vol. 1., 1883, p. 588.
[9] British Medical Journal, 1887, Dec. 24, p. 1390.

A CASE OF ULCERATIVE PERFORATION OF THE TRANSVERSE COLON: LAPAROTOMY TWELVE HOURS LATER; DEATH ON THE SEVENTH DAY FROM SEPTIC PERITONITIS CAUSED BY FÆCAL EXTRAVASATION.[1]

BY MAURICE H. RICHARDSON, M. D.,
Visiting Surgeon, Massachusetts General Hospital.

THE following case, though resulting in death, illustrates the importance of early exploration in those cases of sudden, acute pain in the abdomen, accompanied by rapidly rising pulse, temperature, and respiration, in which the diagnosis has hitherto been made too frequently on the autopsy table. Although the case resulted fatally, the course of the disease was such as to convince me that under similar conditions an early operation may be brilliantly successful.

E. J. K., thirty-nine years old. Twelve years ago had typhoid fever. Since then comparatively well, though not robust. For past two years in better health than usual. *Never any trouble with the bowels*, the movements of which have always been regular and normal. Catamenia normal and painless.

September 10th, 1888. This morning was as well as usual. At nine o'clock was standing on a chair wiping windows about twenty minutes. In doing this did not strain herself at all. Soon after getting down from the chair had sudden sharp pain in the epigastrium, shifting in a few moments to the hypogastric and left iliac regions. Pain became very severe. Vomited once. She sent for a neighboring apothecary, who gave her an anodyne.

An hour or two later she was seen by Dr. Lena Ingraham, to whom I am indebted for the history of the patient, who, recognising the serious nature of the symptoms, sent the woman into the Massachusetts General Hospital, where she arrived late in the afternoon.

On entrance the following notes of her condition were made: "Fairly developed. Facial expression one of pain and anxiety. Decubitus on the left side, with knees drawn up. Pupils, not contracted. Tongue clean. Heart and lungs negative. Abdomen somewhat distended, tympanitic, and very tender in hypogastric and left iliac regions. Palpation negative on account of the abdominal resistance. Urine high, acid, 1022, with slight trace of albumen. Sediment considerable. Increase of leucocytes and vaginal epithelial cells. No casts. Has had a normal, painless movement of the bowels daily. Yesterday, the day before entrance, ate heartily of baked beans."[2]

Temperature, after three o'clock P. M. continued to rise steadily, as shown by the chart, till 10.30 P. M., just twelve hours after the first symptom of pain, when it had reached 104.2 F. The pulse had risen from 120 upon entrance to 140; the respiration from 39 to 45. I was called to see this woman at about eight o'clock in the evening by the medical house officer, under whose charge she was. The patient was in good condition, looked well, and, though in pain, the amount was not excessive, and the constitutional symptoms not alarming. I examined her very carefully, and was not able to come to any definite conclusion either as to diagnosis or treat-

[1] Read before the Boston Society for Medical Improvement, Oct. 8, 1888.
[2] Mass. Hosp. Records.

ment. Vaginal examination was negative. I ordered hot applications to the abdomen (corrosive sublimate dressings), morphia, and hourly observations of pulse and temperature.

On my return to the hospital at ten o'clock I found that pulse and temperature had been rising steadily. The abdomen had become more distended, and some dulness had made its appearance in the flanks, which altered with a change of position.

This case then presented the following important points: —

Absence of all abdominal symptoms previous to onset of pain; better health than usual for previous two years, though never a robust woman; acute and sudden pain in abdomen after unusual exertion; steady rise in pulse and temperature; increasing distention of abdomen; other organs and symptoms negative.

I was not able to come to any definite conclusion in this case. Her condition suggested general peritonitis from rupture of an extra-uterine pregnancy, an inflamed tube, or of the gastro-intestinal tract. The last possibility was not seriously considered. Simple hæmorrhage was considered, but thought improbable from the rapid rise in temperature.

At half-past eleven the patient began to vomit. This symptom, in addition to the others, decided me to open the abdominal cavity at once.

An incision was first made in the median line half-way between the umbilicus and pubes, it seeming more probable that the trouble originated in the pelvis rather than in other abdominal organs.

The cut was carried rapidly to the peritoneum, and then with extreme care, to avoid injury to the intestine. Yet on going through the peritoneum there was a burst of gas and fecal matter which looked as if the bowel had been cut. I enlarged the cut and found the coils of small intestine covered with fecal matter, mainly beans, which she had eaten the day before. On washing out the cavity through the enlarged incision I found the stomach presenting well below the umbilicus. The omentum was adherent to the anterior abdominal wall, and between the layers of this I could follow the track of fecal matter to the transverse colon. In the anterior and upper aspect of the transverse colon there was an ulceration as large as a silver dollar. The edges were smooth and brittle. The perforation had been guarded against by adhesions between the anterior and posterior layers of the omentum for some time, and it was by breaking away of these adhesions that the fæces were finally extravasated into the abdominal cavity.

In making the search for the opening, the incision was carried up eight inches in the median line.

I next united the edges of the opening in the colon to the abdominal wound by means of silk sutures, making the artificial anus at the umbilicus. In carrying out this procedure I found it very difficult to bring the colon up into the wound, probably on account of old adhesions. A finger's length beyond the ulceration the colon was narrowed so as to prevent the passage of the left index finger. Nothing else abnormal was found.

There existed about the ulcerated area apparent adhesions of recent origin to the mesentery and stomach. The bowels generally were covered with a fibrinous exudation.

The abdominal cavity was thoroughly washed out with warm water in all directions.

A glass drainage tube of large size was left in the lower angle of the wound, and a rubber one in the bowel.

Patient came out of the ether well, and had a very comfortable night on the whole. The vomiting was quite frequent during the next day, but entirely ceased towards evening. During the next three days the condition steadily improved. She was able to retain what little was given by the mouth, and the constitutional symptoms were very encouraging.

On the fifth day she became restless, pulse and temperature began to rise slowly, nausea and vomiting came on, and septic peritonitis proved fatal on the seventh day.

Autopsy.— E. J. K.: Incision in abdominal wall eight inches long, united by stitches, excepting for fistulous opening into the intestine near to umbilicus.

The wound was united superficially over the upper half; but in lower half united for whole thickness of the abdominal wound. The coils of intestine unusually distended, united by soft fibrinous adhesions, and covered here and there by small opaque yellow masses resembling fibrin.

The pelvis contained about two ounces of puriform fluid, and there was a smaller amount in the general abdominal cavity.

The stomach, duodenum, omentum, and colon removed *en masse.*

Small intestine *in situ*, nothing unusual. Stomach and duodenum showed nothing abnormal.

A fistulous opening led into the transverse colon twelve inches from the cæcum, the size of a silver dollar.

The edges of the ulcer ragged and gangrenous, and partially detached from the abdominal wall.

Immediately above this fistulous opening was a small cavity the size of a fist (capacity five ounces) formed by a folding of the gastro-colic omentum, showing a perforation at the dependent part about the size of a 25-cent piece, and another one opening into the general abdominal cavity next to the perforation in the colon.

On laying the colon open a moderate stenosis, due to old cicatricial contraction, was found to exist, ten inches in length, beginning five inches above the cæcum, and extending three inches beyond the perforation in the colon, at which place the stenosis was greatest, but readily admitting the forefinger.

Kidneys and liver nothing remarkable.

Diagnosis — acute general peritonitis; chronic circumscribed peritonitis; old perforation of colon; stricture of colon.

This case is interesting and remarkable, not only from the rarity of the conditions that existed, and the early though unsuccessful effort at relief, but also from the fact that the washing out of the abdominal cavity, after distention with extravasated gas and fæces, was so complete and successful that no foreign material was found at the autopsy. The abdomen was perfectly clean except at the place where the second extravasation had taken place. This fact, with the favorable progression of the case for five days, makes it very probable that the woman would have recovered from the original

accident had nothing new developed. If nothing had given way at the point where the bowel was sutured to the abdominal wound, I believe that this woman would have recovered from an extravasation so great as to fill and distend every part of the peritoneal cavity with fecal material. It is surprising that there should have been so favorable a course for five days, and it is very encouraging to those of us who maintain that in grave cases of doubt an exploratory incision of the abdomen should be made at the earliest practicable moment.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M. D., SECRETARY.

MONDAY, October 8, 1888, DR. O. F. WADSWORTH, President, in the chair. DR. E. G. CUTLER read a paper on

FÆCAL ACCUMULATION.

DR. F. MINOT said, respecting the etiology of fæcal accumulation, that many cases occur among females, especially elderly women, as one would expect from the sedentary life which they generally lead. But cases are not rare among young children. Many of these may be ascribed to the character of the nourishment which is now in vogue, consisting largely of malted food, with comparatively little refuse substance to excite peristaltic action. Very adhesive substances, such as oatmeal, are also apt to become moulded into balls by the action of the intestines, and obstruct the rectum. The diagnosis of such cases is sometimes obscure, since the irritation set up by the hard masses may give rise to a mucous discharge resembling diarrhœa. The same thing may occur after the use of opiates in acute diseases, as rheumatism, etc.

Dr. Minot had seen great relief, in cases of fæcal accumulation, follow the use of the preparations of buckthorn, such as the fluid extract of cascara, given in small doses for a long time. He mentioned two cases which he had lately treated. Both the patients were women over seventy years old, who had long suffered from fæcal accumulation, and who obtained complete and permanent relief from the extract. In each there were several dejections (sometimes as many as eight) daily, of a semi-solid consistence, without pain, continuing in one of the patients for several weeks, before the whole fæcal mass was removed.

In another class of cases intestinal obstruction may be suspected, and the patient be energetically treated for it, when it does not exist. This is apt to occur in peritonitis which has been overlooked. In one instance which he had seen, a post-mortem examination showed that the intestinal canal contained nothing but a small quantity of fluid fæcal matter.

DR. F. C. SHATTUCK spoke of the great importance of always keeping in mind fæcal tumors whenever an abdominal tumor is found. He spoke of the danger of the use of cathartics in cases of fæcal accumulation.

DR. M. H. RICHARDSON asked the reader if he had found any cases recorded of perforation due to the use of cathartics. He was told that such a case had been reported.

DR. C. P. PUTNAM described an appliance which he had devised to prevent the escape of injections from the rectum, and at the same time to regulate the pressure. It consisted of an ordinary fountain syringe, to the end of the tube of which was attached a rubber bulb, like an atomizer bulb. A small nozzle was attached to this bulb. When the nozzle was inserted into the rectum, the bulb was pressed against the anus. The bulb being grasped in the hand, the amount of pressure could be determined and regulated with great ease.

Dr. Putnam said there were cases which would not be spoken of as constipation, in which there existed a retardation of fæcal discharge. Such retardation may cause fæcal poisoning.

DR. M. H. RICHARDSON said, referring to fæcal accumulation, that he had never seen an operation performed for such a tumor, which had been mistaken for a new growth.

DR. JOHN HOMANS, 2D, advocated the use of ether and the placental forceps in certain cases of fæcal accumulation, believing that it would save time and suffering. He referred to a case of a patient who suffered, for a long period, from pain which was supposed to be hysterical. An examination of the rectum showed fæcal impaction. Ether and thorough emptying brought entire relief.

DR. F. C. SHATTUCK spoke of a case of enormous distention, in which he had passed the œsophageal tube to such a length that it seemed probable that it had reached the transverse colon.

DR. M. H. RICHARDSON referred to the shape of the rectum and the sigmoid flexure of the colon as determined by plaster casts. Such casts show why it is impossible or very difficult to introduce a tube to any great length.

DR. CUTLER said in answer to Dr. Minot, that he had seen fæcal accumulation occur in children as the result of not finishing the stool, where the child, in its eagerness to get back to play, had not wholly emptied the rectum. He had had no experience in the introduction of the fingers into the rectum in children, except in one instance. His remarks as to subsequent soreness and discomfort from the use of the fingers or a spoon had referred to adults, and especially elderly people.

Dr. Shattuck's criticism of the use of cathartics he believed to be proper. Treves happily expresses it as a waste of therapeutic ammunition to start thirty feet away to remove an accumulation by intestinal irritation, which could be more readily accomplished through a shorter route and safer method to the patient.

He had hoped somebody would speak of the use of the long tube. He had been unable to pass such a tube beyond the loop of the sigmoid flexure in the cadaver.

Dr. Putnam's device for retaining the fluid seems to be the best proposed thus far.

In answer to Dr. Richardson, he said he always, as a rule, in a patient with abdominal tumor, began his examination with high enemata before proceeding with the diagnosis.

In regard to the use of ether, as spoken of by Dr. Homans, it was in the use of high enemata,

or where the mass was above the rectum, that he would advise against it. If the mass were in the rectum, he would use that or any method which seemed the easiest.

Dr. M. H. Richardson reported a case of

ULCERATIVE PERFORATION OF THE TRANSVERSE COLON: LAPAROTOMY; DEATH AT THE END OF SIX DAYS.

Dr. Putnam asked if laparotomy was ever done a second time in cases which seem to be doing badly.

Dr. Richardson answered that it was, but that in this case it was impossible, as the unfavorable symptoms preceded death only by a short time.

Dr. Cutler asked if any cause for the ulceration was discovered.

Dr. Richardson said there was not, except that typhoid fever had previously existed.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

W. H. TAYLOR, M. D., RECORDING SECRETARY.

Boston, October 3, 1888.

The meeting was called to order at 12 M. Records of the last two meetings read and approved. Med. Exr. Draper, Chairman of the Standing Committee, presented the Society with bound volume I. of its Transactions.

Dr. S. W. Abbott of the State Board of Health, read a paper entitled

SOME HISTORICAL AND STATISTICAL FACTS CONCERNING THE USE OF ARSENIC AS A POISON.

The paper was a thorough and exhaustive one, and closed with a strong argument in favor of greater restriction in the sale of the various forms of arsenic, and a suggestion that a prohibitory law would not embarrass the public to a great extent.

Prof. W. B. Hills read a paper on

THE CHEMISTRY OF ARSENIC,

giving a complete statement of the medico-legal relations of the poison from a clinical standpoint, and bringing the subject up to the present date.

Prof. E. S. Wood commended Dr. Hills's paper, and said that the subject of arsenical poisoning is a very important one, from the wide distribution of the poison, and the number of sources from which it may be obtained. Wall papers frequently contain large amounts: specimens have shown from 1½% to 5% by weight. Some of the glazed papers used in Kindergartens have yielded 5% to 6% by weight. Many vermin poisons are made of white arsenic mixed with some coloring matter, as charcoal or indigo. Fly papers contain large amounts of the poison in a very soluble form.

As to the question of accidental or intentional poisoning, the presumption of intentional poisoning is strong when death occurs rapidly, and large quantities of arsenic are found in the organs, and especially where solid arsenic is found in the stomach. Arsenic is rapidly diffused through the body after death, particularly where solutions have been taken. In any form of poisoning by arsenic the urine is of great value for rapid determination by chemical tests, as in some cases the stomach is thoroughly washed out, and gives no arsenic on examination, while the urine may show considerable amounts of arsenic.

The chemist is frequently able to indicate the source of the poison by preliminary examination, as, for instance, finding white arsenic in the stomach mixed with charcoal or indigo.

Putrefaction of the dead body is liable to be retarded in cases where death has occurred rapidly, and large amounts of arsenic are retained in the viscera. A ready test for a powder supposed to be arsenic may be made by throwing a quantity of it in a vessel of water. A certain amount of the powder will float if it be arsenic, and the floating will continue for many days. Strychnia will show the same peculiarity, but may be readily distinguished by its bitter taste.

Med. Exr. Draper inquired how long a time elapses before arsenic is eliminated from the body, and is not the brain important chemical material in poisoning by arsenic?

Prof. Hills did not think that the brain was very important chemical material. Cases where the brain has contained large amounts of the poison were known to have taken very soluble forms for some time. In ordinary cases, of the solid viscera, the liver ranks first in importance, and the kidneys next.

Prof. Wood has known of a case where arsenic was detected in the urine five minutes after being taken. In one case it was found for nineteen days, and not on the twenty-first. In the Alexander case, reported by Taylor, elimination was complete in sixteen days.

Med. Exr. Gleason asks how generally (in the experience of members) undertakers embalm bodies?

Prof. Draper said that he had had little trouble from early embalming. He thought that a regulation controlling undertakers in this matter should become a law.

Med. Exr. Gleason discusses the question of regulation of the sale of arsenical preparations by law, and thinks that the trades interests would strongly fight a prohibitory bill.

Dr. Abbott considers the so-called embalming a sham, and thinks it should be done away with. In most cases the undertaker injects a fluid, of the nature of which he knows nothing, into cavities of the body regarding which he is equally ignorant. Most embalming fluids have, as their essential ingredient, sodium arsenite.

As to rapidity of death in suicidal cases, the shortest time in his collection of cases was six hours, and the longest six days, the average being eleven and a half hours.

Prof. Davenport mentioned a case of arsenical poisoning, the origin of which was the dye in a red stripe of a window awning.

Med. Exr. Hoitt mentioned a case of homicidal poisoning in which the ends of justice were defeated by the injection of embalming fluid by an undertaker.

Prof. Draper read a paper on the anatomical appearances resulting from arsenical poisoning. The paper was of great value as an exponent of the author's experience, as well as of the present knowledge of the subject.

Prof. Hills inquired how frequently sub-endocardial extravasations occur.

PROF. DRAPER believed that they occurred as a rule.

MED. EXR. TOWER read a report of a case of homicide by white arsenic, with autopsy and chemical examination.

THE PRESIDENT announced the death of Drs. R. R. Clarke of Whitinsville, and Y. G. Hurd of Ipswich, members of this Society.

Voted to adjourn.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

W. E. HUGHES, M. D., RECORDER.

SEMI-ANNUAL conversational meeting, the President, F. P. HENRY, M. D., in the chair.

Abstract of the address delivered by W. T. COUNCILMAN, M. D., on

SOME FURTHER INVESTIGATIONS ON THE MALARIAL GERM OF LAVARAN.

This organism, first described by Lavaran, has been met with in every case of malarial fever which the writer has met with. The organism is in high degree polymorphous, and ten tolerably distinct forms may be found in the blood. Some of these evidently represent different stages of development, and the connection between them is obvious. Others present such marked differences in form that no connection between them can be made out. Some of the forms are only found outside of the red corpuscles, and others are found free in the blood. The forms described are: 1. Non-pigmented small amœba-like bodies inside the red corpuscles. 2. Pigmented bodies larger than No. 1, also in red corpuscles. 3. Pigmented bodies about the size of red corpuscles. 4. Segmenting forms of the No. 3 body. 5. Small hyaline bodies, which are formed by this segmentation. 6. A crescent-shaped body with pigment in the centre, the horns of the crescent being often connected by a fine line. 7. Round or oval bodies which differ from No. 6 in shape only. 8. A pigmented body provided with numerous long, actively moving flagellæ. 9. Actively moving free flagellæ, which are evidently derived from No. 8. 10. A pigmented body with an active undulatory movement of its periphery. The first five forms are found only in intermittent fever, No. 4 only being seen in the blood during the chill period, and its presence is invariably connected with the chill. Nos. 6 and 7 are found in cases of malarial cachexia. The most interesting forms, and about whose parasitic nature there can be no doubt, are the bodies Nos. 8 and 9. These are generally absent in blood taken from the finger, but they may be found in any type of the disease. They are the only forms of the organism whose presence in the blood is not associated with a special type of the disease. They were found, however, in fifteen out of the twenty cases in which the blood of the spleen was examined. Of these twenty cases, twelve were cases of malarial cachexia, and eight of intermittent fever. In the twelve they were found ten times, and in the eight cases of intermittent five times. From this it seems probable that Lavaran was right in considering the flagellate organism the most important form of the parasite. The influence of quinine on the intracorpuscular forms of the parasite is most marked. Doses of fifteen grs. t.i.d. for two days in succession were found sufficient to cause them to disappear. The effects of the quinine were not so apparent in the other forms. The crescents were apparently not diminished in number in one individual after he had taken forty-five grs. of quinine daily for seven days, and sixty grs. daily for four days.

DR. WM. OSLER said the thought which had struck him most forcibly in looking over this subject was the almost perfect unanimity which has prevailed among the different observers as to the appearance of these organisms. With the sole exception of the segmented form (No. 4) Lavaran and the early observers had described them all. His own observations, since the communication he had presented to the Society last year, had been somewhat limited. He had, however, made a series of observations upon the blood of fishes and birds, since it had been stated that bodies resembling Nos. 1, 2, and 3 had been found in the blood of carp and some water-fowl. Prof. Baird had offered him facilities for this work at Wood's Holl, and had kindly furnished him with forty-five carp. He had failed to detect any such organisms in the blood of these. In the blood of a goose sent him from Ontario he had found one or two pigmented bodies. It had been stated by Dr. McCallum, who sent him the goose, that the bird had malaria. However, the bodies were not numerous, nor was the temperature of the goose elevated, nor, so far as he could make out, had it chills. Dr. Councilman had not figured one body which is very peculiar indeed, namely, a solid body in the centre of a clear space. It stains like a microorganism, varies in size, and, although the body itself does not change in form, yet there are sometimes changes in outline in the clear space surrounding it; they were somewhat abundant in one case only. One other point with regard to the clear bodies (No. 1): in five or six instances he had seen such bodies pass out from the corpuscles, remaining out and undergoing no further change of form. He was not altogether prepared to say what was the relationship of these bodies to the other bodies described. It has been claimed that similar changes can be obtained by special methods of treating the blood. The most important question is first to determine the relationship of the hyaline to the pigmented bodies, and the possibility that the hyaline may not be directly associated with them. He was convinced that the pigmented and non-pigmented bodies were merely different stages. He could fully confirm what Dr. Councilman said with regard to the crescents. They are most peculiar and interesting bodies, occurring in the chronic cases and in those in which there had been no chills. Three weeks ago he had lectured on a case as one of mild typhoid fever: it had lasted eight or ten days with constant fever, up in the evening, down in the morning, slight enlargement of the spleen, no spots. His resident examined the blood and found what he thought were crescents. The case got rapidly better, left the hospital, and returned in a few days with a distinct chill, with crescents in the blood and a well-marked remittent fever. The motile forms he had not seen nearly so frequently as Dr. Councilman; though he had not examined the blood from

the spleen they had been present in eight or ten cases. Nor had he seen free filaments nearly so often; when he wrote his paper he had not seen them at all. Since then he had watched the process of separation. It was out of the question to suppose that the crescents or motile forms could come from degeneration in the stroma of the corpuscle, but that the hyaline forms resulted from such changes was not altogether improbable, and further investigations were necessary to determine this point.

Dr. J. P. C. Griffith called attention to the diagnostic value of these organisms, and instanced a case where, from the indefinite history and symptoms, he was unable to make a diagnosis until after an examination of the blood, when a short course of treatment resulted in a cure.

Dr. H. C. Wood said that no one seemed to have made any connection between the crescents and the amœboid forms: they seem to differ in that these are destroyed by quinine, those are not affected. We know that malarial cachexia is cured by quinine, arsenic, and iron: if these remedies have no effect on the crescents, what connection have these bodies with malaria, and what becomes of them? Do they eventually disappear?

Dr. Formad asked whether these organisms are the same as those bodies described by Hütter some twenty years ago?

Dr. Councilman said in concluding that Hütter described moving bodies attacking the red corpuscles, existing in all fevers, and apparently almost everywhere else. These observations had never been confirmed. The point raised by Dr. Wood had always puzzled him, and for a long time he had tried to reconcile himself to a belief in two distinct diseases, but this he could not do, as always, as the other forms disappear, the crescents appear. He had never seen the crescents unless with a history of previous chills. He was not altogether prepared to say that quinine had no effect on the crescents, though in several cases he had given it in large doses with no results. Still in some cases they do seem to disappear. He thought with Dr. Osler that the crescents could not be possibly produced by changes in the stroma of the corpuscles, though some of the other forms might.

Recent Literature.

Essays on Hysteria, Brain-tumor, and some other Cases of Nervous Disease. By Mary Putnam Jacobi, M. D. 8vo. pp. 213. G. P. Putnam's Sons, New York and London. 1888.

In this volume the author has collected some six or seven papers on various neurological subjects, some of which have appeared elsewhere, and has thus made them convenient for reference,—an example which we wish others might follow. The most elaborate article in the volume is the essay on hysteria. The conditions fundamental to hysteria are asserted to be "a congenital or acquired deficiency in the power of nerve-elements to effect the storage of force in nerve tissues." Hence fatigue is more easily induced in the hysterical. Sensory disturbances are found to be of two kinds, anæsthesia and hyperæsthesia. In the former case the cell may not have force enough to appropriate nutriment from the blood, or the blood-supply may be defective. In the case of hyperæsthesia there is, however, an excess of centripetal stimuli. The over-excited sensory centres may thus inhibit other regions in the fore-brain, and, in connection with the defective storage in the motor centres, may diminish the centrifugal activities, giving rise not only to motor paralysis but to defective mental energy. This exaggeration of centripetal stimuli explains also the intense egotism of the hysterical. The theory of hysteria which is so carefully elaborated by the author seems to us the one which is most to be approved, and the theoretical corollaries as applied to treatment — to awaken more cortical areas into functional activity, and to restore inhibitory powers to the cortex and relieve the surcharged sensory centres — have long since been adopted by the wise physician upon empirical grounds. The second paper on tumours of the brain is a reprint of the article in Wood's Handbook, and is a trustworthy and complete monograph, giving numerous tables compiled from the works of Ladame and Bernhardt. It has rather too much of a statistical character to render it wholly satisfactory as an article for a hand-book, and it necessarily suffers by republication now, since the absorbing question of the operative treatment of brain-tumors had hardly been discussed when it was written. The rest of the book is taken up by short papers on the loss of nouns in aphasia, nocturnal rotary spasm, the prophylaxis of insanity, antagonism between remedies and diseases, and hysterical locomotor ataxia.

De l'Epilepsie Jacksonienne. Par le Dr. E. Rolland. 8vo. pp. 192. Paris, 1888.

This is a *mémoire couronné* by one of the physicians of the "John Bost" asylums, and it is, moreover, the only monograph which has yet appeared upon this interesting subject. The author has made an exhaustive study of the literature of the subject, and has added a careful study of the three cases which have come under his own observation. He begins his memoir with a brief review of the anatomy and physiology of the cerebral cortex, and a careful study of the history of the affection. This is followed by a detailed study of the symptomatology, based on 112 reported cases with autopsies, with tables and a diagram of the brain showing the part affected in each case, the cases being classified according to the part affected. Jacksonian epilepsy has nothing in common with idiopathic epilepsy, but it is almost always symptomatic of a cerebral lesion. The essential feature of a lesion which can produce Jacksonian epilepsy is not its nature but its seat, which is usually in the psycho-motor region of the cortex or near it. The location of this lesion can be determined by the character of the onset of the convulsions and by the post-epileptic paralysis which may follow. Medical treatment, except in syphilitic lesions, is usually ineffectual, but surgical treatment as inaugurated by Horsley is of great promise. Although the writer has not made any new contributions to our knowledge of this subject, he has given us a useful and trustworthy monograph which contains a careful summary of our present knowledge, such as could be obtained only by laborious search through scattered articles.

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THE DOCTOR AT HOME.

A DOCTOR'S wife was not long since overheard telling her husband that he was pleasant everywhere save in his own family; and the doctor admitted that his good nature was so exhausted in his daily visits to his patients that he was irritable when he reached his home. Exactly how true the doctor's admission was in that particular instance it is impossible to say, but it seems as though in the ordinary course of a doctor's existence such a condition might often occur. Physicians certainly meet with many things in their daily rounds that try their tempers. Life is for most of them a constant study how to coax or compel obstinate or ignorant, perhaps silly or even insane, patients to follow the course thought to be for their good. All these troublesome individuals must be reasoned with, or influenced by some means to do as they ought. To carry his point the doctor must keep his temper. He usually preserves an outward calm, but if he is naturally quick tempered it is often at the cost of an effort which is exhausting. After such a struggle he reaches home in a state of irritability combined with mental and physical weariness, and under such circumstances it is not easy to meet little home trials with patience.

If he is met with the story that Jack will not mind his mother, and that Jane is in disgrace because she did not come directly home from school, and, perhaps, in addition, with the demand that he take some means to discover the cause of a disagreeable odor that has manifested itself somewhere about the house, what wonder if his temper proves inadequate for the moment to meet the strain that comes just at the time when he thought the vexations of the day were over and he might eat his belated and overdone dinner in peace. The family cannot know what the husband and father may have been through during the forenoon. His dearest patient may be slowly sinking and he is filled with bitter thoughts at the limitations of his art; he has just discovered that a patient whose sense of business honor he knows to be of the very highest has deceived him; or the pathologist has shown his diagnosis to be wrong and all the theories he has built up have come to naught; or, most exhausting of all, he has spent an hour with some half-hysterical and wholly sick woman, listening to her complaints and trying to set her right. The ever-recurring annoyances cannot be enumerated. Perhaps the doctor's family needs especial grace to so order the household that the home vexations shall not be allowed to obtrude themselves until after such a time as shall allow the strained temper to recover.

Doctors are sometimes reviled by ascetics because they indulge in an occasional cigar after the day's work is over. To what class of beings can the cigar be better adapted than to the doctors! The load of their patients' ills grows light when lifted by the smoke, and their minds recover their wonted buoyancy. Perhaps if the woman whose reproach gave rise to these reflections had waited until the cigar was half smoked before she told of the shortcomings of Jack and Jane, she might have had less occasion to complain of her husband's temper. The patients surely are also benefited by the doctor's cigar; he is able to judge of their ills more philosophically when his over-excited nerves are quieted by the gentle sedative.

There is an idea prevalent in some doctors' families, more particularly among his wife's relatives, perhaps, that the doctor is lazy. Unless he is possessed of a superabundant vitality he is apt to be very quiet when at home. Not knowing what feat of endurance he may be next called upon to perform he learns to husband his strength for emergencies, and when not in action professionally he very likely presents the appearance of laziness to a casual observer.

If he is ambitious, or dependant upon his practice, it takes the doctor some time to learn to defend himself against encroachments, as, for instance, to send word that he is at dinner to a caller, so that an uninterrupted meal is an exception. It is seldom that a doctor is able to chat pleasantly with a strange visitor out of office hours about what may be done during office hours and the size of his fee, while still positively refusing to advise him professionally except during the hours appropriated to office consultations.

The doctor is apt to develop some sort of a hobby in the way of recreation. He is often specially fond of novels. Such a taste is seldom so catholic as that said to have been possessed by Macaulay,

who found some amusement in any novel. The doctor is more fastidious, and much more apt to know well some particular author whom he reads over and over again. Occasionally he rides a tricycle, though if he be much of a surgeon he will probably be shy of the less stable bicycle. He is very likely to cultivate a small flower garden if he lives in the country, or he becomes an authority on mushrooms, or in some other circumscribed field of natural history.

His office is a favorite spot for the little ones of his family, and he is subject to unlooked-for invasions occasionally, against which he has learned to close his door as though he were closeted with a patient, a proceeding which Jack and Jane resent when they find that no patient was there. Visitors, as they enter out of office hours, can often hear the retiring scuffle of little feet. At such times Hans Andersen, the Tanglewood Tales, or Alice in Wonderland, and Water Babies usurp the place on the office table that one expects to see occupied by more strictly professional volumes, and not seldom traces of feminine occupation, in crochet needles and unfinished embroidery, or even a stocking with the darning-ball and needle, show that the office is visited by others than the junior members of the family.

CONCERNING CHOLAGOGUES

Recently MM. Prevost and Binet of Geneva have been continuing the work of experimentation on cholagogues begun by Hanfield Jones in 1863, and subsequently pursued by Arthur Gamgee and Hughes Bennett, Rutherford and Vignal, in England, Röhrig in Germany.

They first studied the action of alkaline salts, taking chiefly dogs as the subjects of their experiments. They found that the bicarbonate, carbonate, and chloride of sodium, as well as the Carlsbad salts, do not produce any notable modification in the flow of bile. The same result followed the administration of the phosphate of soda. Rutherford, it will be remembered, found this salt an exceptionally good cholagogue. The iodides and bromides, which are in part eliminated by the bile, diminish this secretion, while chloride of potassium augmented the quantity of bile to double or treble the normal. No such fact was noted by previous experimenters. Among the metallic preparations, arsenic, sulphate of copper, and iron were found to have no influence. There was a marked agreement between the results obtained by the Geneva physicians and those of all the former experimenters in trials made with calomel. They affirm that this mercurial does not possess the cholagogue virtues formerly attributed to it, and they insist that the green color of the stools produced by calomel is due, not to the presence of bile, but to a mercurous sulphate formed in the intestine.

Among organic bodies, turpentine, which enters into Durande's specific for gall-stones, with its derivatives terpine and terpinol, produces a notable augmentation of the biliary secretion. It is the same with the salicylates and benzoates, which were also found to be good cholagogues by Rutherford and Vignal.

Among the vegetable purgatives euonymin (as in Rutherford's experiments) was seen to cause copious biliary evacuations. The Geneva experimenters assign to euonymin the first place as a cholagogue. They also noted the markedly favorable action of podophyllin on the flow of bile. They moreover observed that the quantity of bile augments somewhat with the introduction of food, and especially after the ingestion of peptones, but not at all after the ingestion of fat; copious lavements of cold water, said reflexly to have a cholagogue action, do not modify the biliary secretion.

MM. Prevost and Binet have arranged in four groups various medicinal substances relatively to their influence on the secretion of bile: —

Group I. *Substances that augment the secretion of bile.* — Bile, the biliary salts, and urea (the latter was experimented only on animals), essence of turpentine, chlorate of potash, benzoate and salicylate of soda, salol, euonymin, podophyllin, etc.

II. *Substances having a slight, or doubtful, inconstant action.* — Bicarbonate and sulphate of soda (sulphate of soda was found by Rutherford to be markedly cholagogue), chloride of sodium, Carlsbad salts, antipyrine, aloes, rhubarb, hydrastis Canadensis, ipecac, boldo.

III. *Substances that cause a diminution of bile.* — Iodide of potassium, calomel, atropine, strychnine.

IV. *Substances without action on the biliary secretion.* — Phosphate of soda, bromide of potassium, corrosive sublimate, arseniate of soda, alcohol, ether, glycerine, quinine, pilocarpine, senna, columbo.

Lastly, the only substances which are eliminated by the bile are: essence of turpentine and its derivatives, salicylic acid, salol, bromide and iodide of potassium, chlorate of potassium, arsenic, fuchsine, cochenille; traces also are found of iron, lead, mercury, and caffein.

ON THE TREATMENT OF INTESTINAL OCCLUSION BY ELECTRICITY.

It is well known that faradization of the intestine (first taught by Duchenne de Boulogne) in intestinal occlusion gives uncertain results, and is very generally disappointing. Though induced currents produce a very energetic contraction of the

striated muscles, they have but feeble action on the unstriped muscles, and in particular those which cause the peristaltic contractions of the intestines, and this is especially the case when the intestine is already in a torpid state, as is the rule in intestinal obstruction. The interrupted galvanic current, on the contrary, if sufficiently intense, constantly provokes energetic peristaltic contractions. A serious difficulty, however, in the way of utilizing galvanism in these cases is that a current of even feeble intensity, twelve to fifteen milliamperes, for instance, gives rise, at the points where the metallic electrode is in contact with the mucous membrane, to an electrolytic action sufficiently intense to determine the production of eschars.

Bardet, an electro-therapeutist of France, as we learn from the address of Larat before the Academy of Medicine, Aug. 28, has succeeded in remedying the difficulty by terminating the intestinal pole in a mass of salt-water, introduced into the rectum by means of an ordinary syringe, the electrode, which is connected with the battery and made to end in this saline solution, being a gum elastic sound with an olive-shaped metallic tip. Electrization is begun with a current of moderate intensity, and the current is speedily raised by adding to the circuit a certain number of elements, till it attains the intensity of 35 to 40 milliamperes, and the current is allowed to pass without any shock for five minutes. At the end of this time the current is reversed, then it is allowed to pass again, the operator interrupting it about every twenty seconds by a shock about as powerful as the patient can bear. Coincidently with the reversing of the current, the patient is seized with an intense desire for defecation, which he is soon obliged to gratify. Then the séance ceases, the sound is withdrawn, and the patient endeavors to have a stool.

Larat, in the communication referred to, reports sixteen cases where this process was employed; it was successful in ten of them.

WOMEN AND THE STUDY OF MEDICINE.

PROFESSOR WALDEYER, of Berlin, read a paper recently before the Assembly of German Naturalists and Physicians at Cologne, in which he exhaustively reviews the rôle of women in the study and practice of medicine, going back to antiquity, and bringing forward a curious array of historical facts through the middle ages down to the present time. His conclusions are not favorable to the "women doctors." Among the objections which he raises are the following: "The profession, and especially 'the faculties,' will be overcharged; men capable of doing great things will keep out of medicine. This will be an enormous loss to science, for women are good for nothing as experimenters or original workers. In the laboratories they are awkward, careless, and unskilful." He emphasizes the usual stock arguments as to the "separate spheres" of the sexes, and concludes: "We should take care how we encourage the tendency of women to enter upon the study of medicine. It is not the way which will lead to amelioration of their lot. If the medical profession is open to them, the other learned professions must follow in their turn. Hence there is sure to result a fierce and bitter struggle, in which our entire humanity will succumb!"

Such a prospect would be sufficiently gloomy to contemplate, and we hope in this country at least it may be averted!

MEDICAL NOTES.

— A FITTING MONUMENT. — The friends of Dr. Walter A. Dun, Cincinnati, a young physician who died a few months ago, have adopted an appropriate method of erecting a monument. It is to endow a bed in the Children's Hospital of the city by raising a fund of $3,000, the income from which enables the hospital to establish a free bed perpetually in memory of Dr. Dun. This form was chosen because the doctor had done excellent work in planning the hospital.

— The *British Medical Journal* refers to the report of the coroner in one of the "Whitechapel murders" thus: "The coroner, Mr. Wynne E. Baxter, in summing up the evidence given at the inquest held on Annie Chapman, who was murdered in Hanbury Street, Spitalfields, on September 8th, gave a remarkably lucid and able sketch of the probable circumstances of the murder, and adopted a theory as to the motive of the murderer, which, if established by further evidence, would place the crime in a category of which happily there has been no example since the days of Burke and Hare, in Edinburgh, and of the men Bishop and Williams, exposed by Mr. Partridge, surgeon to King's College Hospital, over fifty years ago. Dr. Phillips, who made the *post-mortem* examination, found, as we stated last week, that certain parts of the body were missing; these were a central portion of the abdominal wall, including the navel; the posterior and upper portions of the bladder, the whole of the uterus and the upper third of the vagina. From this fact it was deduced as probable that the murderer possessed some rough acquaintance with human anatomy, and that his object was to obtain the uterus entire; the coroner related a circumstance which appeared to him to supply a motive. Some months ago, it was stated, an American applied to the sub-

curator of the Pathological Museum of one of the medical schools for assistance in obtaining a number of specimens of the uterus. He explained his request by saying that he desired to issue an actual specimen with each copy of a book which he was about to publish, and ended by offering to pay as much as £20 a piece for each specimen. This story, however, presents several inherent improbabilities, which will occur to every medical reader, and we cannot accept it as explaining much that still remains mysterious in this crime."

— The *Sanitary Engineer* calls attention to some of the absurdities proposed in the National Congress as means of meeting future outbreaks of yellow fever. Among these may be mentioned the bill introduced in the Senate by Senator Call, by which it is proposed to establish a scientific bureau in the city of Jacksonville to gather facts in relation to yellow fever. This so-called bureau is to be composed of seven physicians of the different schools of medicine; and if it were ever so constituted it would be anything but scientific.

Another bill equally if not more absurd is the one introduced by Senator Plumb, offering a reward of one hundred thousand dollars to any person or persons who shall discover the cause, remedy, and treatment of yellow fever.

The method of treatment is to be copyrighted, and must cure ninety-eight per cent. of all cases. The evidence required is that all persons who recover from yellow fever under any copyrighted remedy are to file a sworn statement to that effect with the surgeon-general of the army, and all "medical doctors"(!) and nurses who attend any one who dies while being treated with a copyrighted remedy are to report the same to the surgeon-general.

— A woman came to consult Dr. D., whose office was crowded. She complained of pain in her chest. The doctor hastened to write a prescription for a Thapsia plaster 4 x 6 inches.

"Put this on the side where you have pain," he exclaimed.

Three days later the patient returned.

"You have applied what I have given you?" demands the doctor.

"Yes, sir," replied the verdant maid, "I am still wearing it and feel much better."

She pulled up her chemise as she spoke, and there on her chest was the prescription for Thapsia plaster.—*Bulletin Générale de Thérapeutique.*

NEW YORK.

— Another case of yellow fever, the third since August 1st, has occurred in Brooklyn. The subject of the disease was Captain John Jellard, commanding the Red Cross Line steamer Ceareuse, which arrived from Brazil October 22nd. The vessel left Para October 11th, and when four days out Captain Jellard was taken seriously ill. By the time Sandy Hook was sighted, however, he had so far recovered as to be able to go on deck. When quarantine was reached and the steamer was boarded by Health Officer Smith, the captain swore to a clean bill of health; and he was accordingly allowed to go up to Martin's stores at Furman Street, Brooklyn. After reaching Brooklyn, Captain Jellard was taken worse, and on October 24th was removed by the agent of the line of steamers to St. John's Hospital. It was not stated that he was suffering from yellow fever, but the suspicions of the house physician were aroused by his appearance, and he was accordingly at once isolated. Half an hour after his admission black vomit developed, and at eight in the evening he died. The day following an autopsy was made by Drs. Connery, Jewett, Thomas, and Bliss, the result of which abundantly confirmed the diagnosis of yellow fever

It is thought that Captain Jellard was convalescent when he left his bed on the 22nd to get his vessel through quarantine, and that he caught cold at that time and suffered a relapse, which ended fatally. The Ceareuse was at once sent back to quarantine, and thoroughly fumigated; as was also such of the cargo as had been landed on the pier.

— Complaints having been made by the Health Department that the dog pound contiguous to the Willard Parker Hospital, at the foot of Sixteenth Street, East River, was a source of great annoyance and injury to the patients in the hospital, Mayor Hewitt has for some time been in consultation with the Society for the Prevention of Cruelty to Animals, with a view to securing a more prompt and humane method of disposing of the dogs than that now employed, which consists in crowding a large number into an iron cage and drowning them in the river. The Society recommended either electricity or suffocation by carbonic acid gas; but as both these methods were found to involve more expense than was desirable, President Baylis of the Board of Health was asked by the mayor to make some experiments for the purpose of solving the problem. The result of these has led him to declare in favor of chloroform, it being found that one half ounce of a cheap quality of the drug will cause death without pain in two minutes; and it is probable that this will be the method finally decided upon.

— By the will of Dr. Thomas T. Salmi, late professor of anatomy in the College of Physicians and Surgeons, which has just been admitted to probate, his extensive collection and the apparatus

and models employed in his lectures are left in trust for the use of the anatomical department of the college.

— Dr. John William Schmidt Arnold, formerly of New York, died at Sewanee, Tennessee, October 20th. He was born in Charleston, S. C., May 16, 1846, but his family removed to New York while he was quite young. He was graduated at Columbia College in 1868, and from Bellevue Hospital College in 1871. Owing to delicate health he never engaged actively in practice, but he devoted himself with distinguished success to microscopy, physiology, and pathology. While still a young man he was elected to the chair of normal and pathological histology and of physiology in the medical department of the University of the City of New York, a position which he held until his failing health compelled him to remove to the South. He was also curator in Bellevue Hospital for a number of years.

Miscellany.

ANNUAL MEETING OF THE MASSACHUSETTS MEDICAL BENEVOLENT SOCIETY.

THE annual meeting of the Massachusetts Medical Benevolent Society was held at the Boston Medical Library Association on Thursday, October 25th, at four o'clock in the afternoon. The treasurer read his report, in which he stated that eleven beneficiaries had received an annuity of eighty dollars, and recommended either that the annuity should be increased or the list of beneficiaries be enlarged. He also announced that the Society had received during the past year a bequest from the late Dr. C. E. Ware, of $2000, which addition increased the investment fund to the full amount of $25,000.

The following officers were elected for the ensuing year: Dr. Henry W. Williams, President; Dr. Richard M. Hodges, Vice President; Dr. Francis Minot, Treasurer; Dr. Robert Amory, Secretary. Trustees: Drs. Benj. E. Cotting, Augustine Shurtleff, F. C. Shattuck, Joseph Stedman, W. W. Wellington, J. Collins Warren, J. P. Maynard, F. I. Knight, E. G. Cutler.

There are 17 life members, 6 benefactors, and about 200 regular members of this Society.

Drs. Henry R. Stedman and Douglas Graham were elected members of the Society at the above meeting.

SALICYLATES AND CAFFEINE IN HEADACHE.

DR. JAMES LITTLE, of Dublin, has published (see *Dublin Journal of Medical Science*, June; *Practitioner*, Sept., 1888) a valuable note on the relief of migranous headache by a combination of salicylate of sodium and caffeine. Though typical migraine is not very common, we frequently meet with persons suffering from headaches which appear to be of the same nature. This headache occurs at various intervals — three or four times a year, sometimes two or three times a week. The following case is an instance. A married lady, of 58, had suffered for eight years from headaches which had begun two years after the menopause. At first they occurred every three or four weeks; of late the intervals had been only ten or twelve days. The evening preceding the attack she feels drowsy, and during the night often has nightmare. She awakes about five o'clock with throbbing pain in the vertex; retching almost immediately begins; and this continues violently and convulsively during the day, so that she cannot leave her bed — the pain in the vertex continuing all the time. About eight o'clock in the evening her sufferings begin to abate, and next morning she is as well as usual. Much pale urine is passed during the attack; her appetite is always poor; she eats little butcher's meat; and has confined bowels. She suffers almost every night, more or less, from nightmare, and is constitutionally anxious and easily worried. Dr. Little advised her to take pills of bromide of zinc and Indian hemp twice daily, and to use when the attack began the following combination: twenty grains of salicylate of sodium in a wine-glassful of water made effervescent by the addition of a dessertspoonful of the granular citrate of caffeine. The effervescing caffeine makes the dose a very palatable one, which the salicylate alone is not, and probably renders it more useful; but that the good effect is not due to the caffeine is proved by the fact that Dr. Little has seen it relieve persons who had previously used the caffeine alone without benefit. If necessary, a second or even a third dose may be given at intervals of two hours. It does not lose its effect.

MAGNANI ON AN ENDEMIC OF HYSTERIA AT ALBADIA.

MAGNANI, in the *Gazz. Med. Italiana*, September, 1888, gives an interesting account of an endemic of hysteria among the peasants of Albadia, in Italy. Much excitement had been aroused in the neighborhood, and the local priesthood had attempted to exorcise the evil spirits by religious ceremonies, but without success.

The *London Medical Recorder* gives the following summary of the epidemic. In a damp, imperfectly lighted hut lay three young girls and an old woman, who were said to be the most seriously affected with this strange evil, sleeping on some straw. Soon the greater part of the girls in the village who were subject to these attacks had collected in the hut, attracted by the news of the visit of the two strangers, one of whom was said to be a doctor. In a few minutes one of the girls fell down attacked with tonic and clonic convulsions; then another, rather younger, threw herself on the ground, stretching out her arms; a third was seized with a sudden pallor and fell motionless; another, who had been laughing at the first, was herself seized with disorderly movements and contractions of almost all the muscles. Finally, in the course of an hour, fourteen girls of under twenty years of age, one boy of eleven, and a woman of over fifty were attacked with convulsions of different degrees of severity. The attacks lasted generally about ten minutes. Two of the patients deserve further mention: the woman of fifty and a robust peasant of nineteen.

The attacks, in the case of the former, commenced with rigidity of the muscles of the face and neck, and afterwards of the limbs; then she went through the most violent contortions and muscular movements, and, finally, sitting down, beat her chest with her hands, clapped her hands many times, and fell motionless. Sometimes this terminated the seizure, but sometimes she repeated it in exactly the same way again and again. She said that during the attacks she always saw the figure of the woman who had bewitched her and her companions. The other case was a typical example of hystero-epilepsy. The attack commenced with pallor, then she fell, and twisting round and round on the straw, tore to pieces whatever came into her hands. In a few minutes it was all over and she was well again.

The origin of this outbreak is curious. A band of about seventy girls engaged themselves to an old woman to work for her in the rice fields. Afterwards, thinking that they could make a better bargain, they broke their engagement and worked for some one else. The old woman whose indignation they had aroused was in this superstitious country generally supposed to possess the power of witchcraft, and the girls continued daily in dread of being bewitched. This, acting on a constitution enfeebled by eleven hours' work a day, standing in water, under a hot sun, with food consisting chiefly of unsalable beans, some bad bacon, and decaying rice, soon led to a state of very unstable mental equilibrium, which was completely upset by seeing the hysteroepileptic attacks of the first patient. By sending them off to their own homes and isolating them, they were all speedily cured.

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 20, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	661	247	17.40	15.45	4.65	1.80	3.30
Philadelphia	1,016,758	—	—	—	—	—	—	—
Brooklyn	751,432	287	104	19.60	11.90	4.20	2.10	7.00
Chicago	760,000	233	83	17.20	11.18	4.29	2.14	8.60
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	139	52	[2]0.16	15 84	3.60	2.88	7.19
Boston	407,024	188	47	15.90	25.37	2.65	5.83	6.36
Cincinnati	325,000	100	—	19.00	20.00	5.00	4.00	10.00
New Orleans	248,000	122	43	22.14	11.48	8.19	.82	9.84
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	105	39	28.50	5.70	8.55	8.55	1.90
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	15	5	46.66	6 66	20.00	6.66	20.00
Charleston	60,145	43	12	6.99	18.64	2.33	—	—
Portland	40,000	14	3	14.28	—	14.28	—	—
Worcester	76,328	22	9	18.20	4.55	9.10	4.55	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	27	10	37.03	7.40	14.80	11.11	7.40
Fall River	61,203	22	7	18.20	4.55	9.10	4.55	—
Lynn	51,467	11	—	9.09	18.18	9.09	—	—
Lawrence	40,175	19	6	10.52	15.78	5.20	5.26	—
Springfield	39,952	20	4	45.00	25.00	20.00	15.00	5.00
New Bedford	36,298	17	3	29.40	5.88	5.88	5.88	11.76
Somerville	33,307	18	3	11.11	5.55	—	5.55	5.55
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	10	3	—	—	—	—	—
Chelsea	27,552	10	2	20.00	—	—	10.00	10.00
Haverhill	24,979	8	3	—	12.50	—	—	—
Taunton	24,796	9	2	—	11.11	—	—	—
Brockton	24,784	6	1	50.00	—	—	33.33	16.66
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	—	—	—	—	—	—	—
Malden	18,932	8	1	12.50	37.50	—	—	12.50
Fitchburg	17,534	13	5	23 07	30.76	—	15.38	—
Waltham	16,651	10	2	10.00	10.00	—	—	—
Newburyport	13,839	8	2	—	12.50	—	—	—
Quincy	13,336	—	—	—	—	—	—	—

Deaths reported, 2145; under five years of age 698: principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers), 405, consumption 295, acute lung diseases 271, diphtheria and croup 121, diarrhœal diseases 107, typhoid fever 69, malarial fever 30, whooping-cough 28, scarlet fever 26, measles 10, cerebro spinal meningitis eight, erysipelas four, puerperal fever two. From malarial fever, New York and Brooklyn eight each, Washington six, Baltimore four, New Orleans three. From whooping-cough, New York 12, Brooklyn four, Chicago, Baltimore, and Washington three each, Boston, New Orleans, and Fitchburg one each. From scarlet fever, New York 16, Brooklyn five, Baltimore, Boston, Cambridge, Fall River, and New Bedford, one each. From measles, New York nine, Chicago one. From cerebro-spinal meningitis, New York four, Chicago, Charleston, Worcester, and Springfield one each. From erysipelas, New York two, Brooklyn and Washington one each. From puerperal fevers, Baltimore and Charleston one each.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273, for the week ending October 13, the death-rate was 21.0. Deaths reported 3777; infants under one year of age, 1123; diarrhœa 184, measles 76, whooping-cough 62, scarlet fever 55, diphtheria 45, fever 38, small-pox (Hull) one.

The death-rates ranged from 11.9 in Derby to 35.7 in Manchester; Birmingham 17.2, Bradford 20.7, Brighton 17.8, Hull 21.7, Leeds 24.1, Liverpool 21.4, London 18.7, Nottingham 23.5, Sheffield 23.4, Sunderland 24.9.

In Edinburgh 18.9, Glasgow 21.8, Dublin 23.6.

The meteorological record for the week ending October 20, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Oct. 20, 1888.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.	Daily Mean	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in Inches.
Sunday ..14	29.90	41.0	42.0	40.0	92	77	84.0	N.	N.		12	9		O.	C.			.09
Monday ..15	30.02	44 0	56.0	36.0	72	59	66.0	N. W.	S. E.		7	6		C.	F.		.30	
Tuesday ..16	30.06	52.0	57.0	40.0	60	76	68.0	S. W.	S.		2	13		F.	O.		3.10	T.
Wednes...17	29.92	50.0	54.0	46.0	84	86	85.0	S. W.	N. W.		6	12		O.	C.			.06
Thursday, 18	30.08	45.0	53.0	43.0	68	63	66.0	N. W.	N.		6	12		C.	C.			
Friday 19	30.01	44.0	51.0	36.6	76	79	78.0	N. W.	S. E.		5	10		F.	O.			
Saturday, 20	29.78	48.0	58.0	45.0	86	61	74.0	W.	N. W.		7	7		O.	O.			.38
Mean, the Week.																		

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM OCTOBER 20, 1888, TO OCTOBER 26, 1888.

PAGE, CHARLES, colonel, assistant surgeon general, medical director of the Department, will proceed to and inspect the medical department at Forts Ellis, Tex.; Supply, Reno, Sill, and Gibson, Ind. Ter.; Fort Leavenworth, Kans., and the Leavenworth military prison, in the order named, and upon completion of this duty return to these headquarters. Par. 1, S. O. 127, headquarters department of the Missouri, Fort Leavenworth, Kan., October 15, 1888.

WOLVERTON, WILLIAM D., major, surgeon, is relieved from duty at Fort D. A. Russell, Wyoming Territory, and will report in person to the commanding officer, Fort Douglas, Utah Territory, for duty at that post. Par. 16, S. O. 248, headquarters of the army, A. G. O., Washington, October 24, 1888.

By direction of the secretary of War, the leave of absence granted Major John W. Williams, surgeon, in S. O. 209, October 4, 1888, division of the Atlantic, is extended one month. Par. 14, S. O. 246, A. G. O., October 22, 1888.

By direction of the Secretary of War, leave of absence for one month, to take effect on the completion of his present duties, is granted Captain Edward C. Carter, assistant surgeon. Par. 13, S. O. 246, A. G. O., October 22, 1888.

Leave of absence for one month on surgeon's certificate of disability is granted Major William H Forwood, surgeon United States army, Fort Snelling, Minn. S. O. 100, headquarters Department of Dakota, St. Paul, Minn., October 20, 1888.

BROWN, PAUL E., captain, assistant surgeon, is relieved from duty at Fort Sidney, Neb., and will report in person to the commanding officer Fort D. A. Russell, Wyoming Territory, for duty at that post. Par. 16, S. O. 248, headquarters of the army, A. G. O., Washington, October 14, 1888.

By direction of the Secretary of War, First Lieutenant William C. Borden, assistant surgeon, is relieved from duty at San Antonio, Texas, and will report in person to the commanding officer Fort Ringgold, Texas, for duty at that post. Par. 11, S. O. 247, A. G. O., Washington, October 23, 1888.

Leave of absence for one month, with permission to apply for an extension of one month, is granted First Lieutenant R. R. Ball, assistant surgeon United States army. Par. 3, S. O. 129, headquarters Department of the Missouri, Fort Leavenworth, Kas., October 18, 1888.

PROMOTION.

LORING, LEONARD Y., captain, assistant surgeon, to be surgeon, with the rank of major, October 9, 1888, vice Meacham, deceased.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING OCTOBER 27, 1888.

SMITH, HOWARD, passed assistant surgeon, detached from the "Wabash" and granted six months leave, with permission to leave the United States.

AUZAL, E. W., assistant surgeon, ordered for examination preliminary to promotion to passed assistant surgeon.

WIEBER, F. W. F, assistant surgeon, ordered for examination preliminary to promotion to passed assistant surgeon.

AUZAL, E. W., assistant surgeon, after examination detached from Naval Academy to navy yard, New York.

URIE, J. F., assistant surgeon, detached from the "Franklin" and to Coast Survey Steamer "Gedney."

OWENS, THOS., assistant surgeon, detached from Coast Survey Steamer "Gedney," and to Coast Survey Steamer "Blake."

BERRYHILL, F. A., assistant surgeon, detached from Coast Survey Steamer "Blake" and to Naval Academy.

HARRIS, A. N. T., assistant surgeon, detached from Navar Hospital, Mare Island, Cal., and wait orders.

HALL, JOHN H., passed assistant surgeon, detached from the "Monongahela" and wait orders.

CRAWFORD, M. H. passed assistant surgeon, detached from the "Vandalia" and to the "Monongahela."

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.—There will be a meeting of this Society at 19 Boylston Place, on Monday evening, Nov. 5, 1888, at 8 o'clock. Dr. J. T. G. Nichols, "Cases of Empyema." Dr. W. A. Dunn, "Three Cases of Perityphlitis, with recovery." Dr. J. J. Putnam, "A Case of Hereditary Muscular Dystrophy, with Microscopic Demonstrations." Report of Committee on Admissions.

T. F. SHERMAN, M. D., *Secretary.*

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.—There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, November 7th, at 8 o'clock. Communications: Dr. M. H. Richardson, "Two Laparotomies for Extra-Uterine Pregnancy." Dr. Royal Whitman, "A Case of Appendicitis in a child: operation, recovery." "A case of Macewen's Operation (for the radical cure of Hernia) in a girl, resulting in the cure of habitual incontinence of urine." Both patients will be shown. Dr. H. L. Burrell, "A few points in Macewen's Operation for the radical cure of Hernia."

G. H. MONKS, M. D., *Secretary.*

AMERICAN ACADEMY OF MEDICINE. —The American Academy of Medicine will hold its next annual meeting at the New York Hospital, on Tuesday and Wednesday, November 13th and 14th.

Papers will be read by Drs. H. I. Bowditch, of Boston, Theophilus Parvin of Philadelphia, Leartus Connor of Detroit, L. D. Bulkley of New York, J. C. Wilson of Philadelphia, E. Andrews of Chicago, Geo. J. Fisher of Sing Sing, N. Y., C. C. Bombaugh of Baltimore, R. L. Sibbet of Carlisle, Pa., W. F. Waugh of Philadelphia. The President's Address will be by Dr. F. H. Gerrish of Portland, Maine.

RICHD. J. DUNGLISON, *Secretary.*

AMERICAN PUBLIC HEALTH ASSOCIATION. SIXTEENTH ANNUAL MEETING.

The American Public Health Association will convene at Milwaukee, Wis., Tuesday, November 20, at 10 o'clock A.M., and continue four days. The meetings will be held in the Atheneum Hall.

The Executive Committee have selected the following topics for consideration at said meeting:—

I. The pollution of water-supplies.
II. The disposal of refuse matter of cities.
III. Animal diseases dangerous to man.
IV. Maritime quarantine, and regulations for the control of contagious and infectious diseases, and their mutual relations.

Precedence will be given papers upon the above subjects, although other papers of a sanitary nature will be received by the Committee. The topics given indicate the subjects which it is desired to consider, but they are not to be regarded as the exclusive topics of the meeting. Papers of ability and practical application upon any subject connected with the public health interests will be received.

The report of the committee on the Lomb prize essays will be an event of much interest, as some sixty essays have been received in competition for the prizes offered by Mr. Henry Lomb, of Rochester, N. Y.

Reduced railroad rates from all sections of the country can be secured on the certificate plan, as heretofore.

IRVING A. WATSON, *Secretary.*

CONCORD, N. H., Oct. 22, 1888.

BOOKS AND PAMPHLETS RECEIVED.

Hygiene of the Nursery. By Lewis Starr, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania; Physician to the Children's Hospital, Philadelphia, etc., etc. With 21 illustrations. Philadelphia: P. Blakiston, Son & Co. 1888.

The Urine and the Common Poisons. Memoranda, Chemical and Microscopical, for Laboratory Use. By J. W. Holland, M. D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College of Philadelphia. Philadelphia: P. Blakiston, Son & Co. 1888.

Original Articles.

THE DIAGNOSIS AND MEDICAL TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.[1]

BY REGINALD H. FITZ, M. D.,

Professor of Pathological Anatomy in Harvard University, and Physician to the Massachusetts General Hospital.

In the consideration of intestinal obstruction from a medical point of view, the subjects of chiefest importance undoubtedly relate to diagnosis and treatment.

The present communication is intended to call attention to those features which may possibly serve to characterize the former, and to mark the limits of the latter up to the point of surgical interference. It will be admitted without much question that the difficulties of exact diagnosis, and the possibilities of permanent relief, are greatest in acute, internal forms of obstruction. It is, therefore, to this part of the subject, in particular, that the present enquiry is directed.

The term intestinal obstruction would seem to be equivalent to stoppage of the bowels, and refers to the absence of an important function of this apparatus. The conspicuous causes of such a stoppage are essentially mechanical, and the anatomist finds the bands and cords, the slits and pouches, the invaginations, twists and knots, the strictures, tumors, and abnormal contents.

But in another class of cases the stoppage is present, the patient dies, and there is not found an entirely satisfactory mechanical cause of obstruction. If the intestinal coils are agglutinated or adherent in such a manner that valve-like projections into the canal are formed, these are considered by some a satisfactory explanation of the symptom. If the mesentery of any coil is so contracted that the legs of the loop are closely approximated, this change is frequently considered a sufficient cause. But agglutinated and adherent coils are frequently found in the absence of symptoms of intestinal obstruction, and the contrated mesentery is seen in cases where no stoppage of the bowels has occurred.

This symptom takes place in still another series of cases where the anatomist finds no suggestion of a lesion which offers the remotest possibility of acting as a mechanical cause. The physician then says the obstruction must be due to a paralysis of the muscular coat, or a spasm of the circular fibres, or a faulty innervation, or some peculiar modification of function.

Intestinal obstruction, in a technical sense, however, means something more than stoppage of the bowels. The latter symptom may be present at the outset, it may occur later in the course of the disease, or frequent loose movements may be a most characteristic symptom of the especial variety of obstruction, as in intussusception. Frequent dejections may also occur in the early stages of other varieties of obstruction, and throughout the course of the disease when fæces are the cause. Stoppage of the bowels is thus not only unnecessary as a symptom of intestinal obstruction, but, when present, its particular consideration has led to frequent errors of diagnosis. Of all the causes of stoppage, which have given rise to an erroneous diagnosis of obstruction, there is none more frequent than peritonitis.

In a general peritonitis the bowels are expected to remain inactive, and medical efforts are frequently directed to this result. In the circumscribed variety the important symptoms of localized pain and paralyzed bowels have often led to the diagnosis of acute, internal obstruction. This is particularly true in the case of inflammation of the vermiform appendix, a disease which is constantly being mistaken for acute obstruction. This error in diagnosis leads to corresponding errors in treatment. Because the bowels have been opened in such cases by powerful catharties, quicksilver, electricity, violent movements of the body, and the like, therefore these are claimed to be valuable and efficient remedies in intestinal obstruction. Too often the speedy death of the patient results from such treatment, the local peritonitis being made general.

The only intestinal obstruction which deserves the joint consideration of surgeons and physicians is that due to well-recognized mechanical causes. It is the acute, internal variety of mechanical intestinal obstruction which forms the subject of this paper.

There are four main questions which require consideration in any given instance:—

First, Is the case one of acute, internal obstruction.

Second, Where is the obstruction seated?

Third, What is the variety?

Fourth, What is to be done?

The statements which follow in this paper are essentially based upon the study of a series of cases collected from the English, German, and French medical literature since 1880. Its claim to consideration lies in the fact that all the cases have been submitted to the severest criticism, with the resulting exclusion of a very large number. They are included under the heads of strangulation by bands, cords, etc., intussusception, knots and twists, obstruction by abnormal contents, strictures, and tumors. The entire number is two hundred and ninety-five, and they are divided as follows:—

Strangulation	101 cases	= 34	per cent.
Intussusception	93 "	= 32	"
Abnormal contents	44 "	= 15	"
Twists and knots	42 "	= 14	"
Strictures and tumors	15 "	= 5	"
	295 "	100	"

Excluding from this series the cases of acute obstruction from abnormal contents and from strictures and tumors, which are of the least importance in practice, there remain—

Strangulation	101 cases	= 43	per cent.
Intussusception	93 "	= 39	"
Twists and knots	42 "	= 18	"
	236 "	100	"

It is interesting to compare these figures with the larger number in the collections of Duchaussoy,[2] Brinton,[3] and Leichtenstern:[4]—

[1] Read before the Congress of American Physicians and Surgeons in Washington, D. C., Sept. 18, 1888.

[2] Duchaussoy, Mémoirs de l'Académie Impériale de Médecine, 1850, xxiv. 97.

[3] Brinton, Intestinal Obstruction, 1867, 88.

[4] Leichtenstern, Ziemssen's Handb. d. Sp. Path. und Therapie, 1876, vii. 2, 399.

Percentage of relative frequency of the more prominent causes of acute intestinal obstruction.	Number of cases included.	Strangulation.	Intussusception.	Twists and Knots
Duchaussoy	347	54	39	6
Brinton	481	33	54[1]	10
Leichtenstern	1134	35	39	6

STRANGULATION.

First in numerical importance as a cause of acute, intestinal obstruction is strangulation by bands or cords.

These are most frequently the result of a pre-existing peritonitis, and are either fibrous adhesions alone, or are formed by adherent appendages of the intestinal or genital tract. The former are epiploic, vermiform, diverticular, omental, or mesenteric. The latter are Fallopian tubes and pedunculate ovarian or uterine tumors. The diverticular appendages are either Meckel's diverticulum, the omphalo-mesenteric or vitelline duct, or the persistent remains of the vitelline blood-vessels. The former is usually attached by the latter to some part of the abdominal wall or contents. It may also be thus attached from peritonitis in the absence of the latter. The persistent vitelline blood-vessels or their remains may likewise form the strangulating cord in the absence of the diverticulum. Omental cords may be adherent in consequence of peritonitis, or they may result from the presence of slits or fissures in the omentum. The mesentery serves as a cause of strangulation when it is fissured by a slit. Peritoneal pouches and openings may be added to the above list.

There seems to be no essential difference in the nature of the symptoms which arise from these causes of obstruction. Cases of knots and twists of the small intestine might be added to the list from the nature of their symptoms, but their number is so small, only two of each, that for practical purposes they may be omitted.

The immediate anatomical causes of the one hundred and one cases of strangulation are as follows, the numbers being regarded as equivalent to percentages: —

Adhesions	63 cases.
Vitelline remains	21 "
Adherent appendix	6 "
Mesenteric and omental slits	6 "
Peritoneal pouches and openings	3 "
Adherent tube	1 "
Pedunculate tumor	1 "
	101 "

84% of the total number of cases were due to bands and cords in a limited sense. It is noteworthy that cases of diaphragmatic hernia, which form 19% of Leichtenstern's cases, were not reported in the past eight years.

The following table shows the bearing of sex in the frequency of obstruction from strangulation: —

	Adhesions.	Vitelline Remains.	Appendix.	Slits.	Pouches.	Tube.	Tumors.	Total.
Males	39	19	5	5	2			70
Females	24	1	1	1	1	1	1	30
	63	20	6	6	3	1	1	100

It thus appears that 70% of the cases of obstruction from strangulation occurred among males. Further, that nearly all the cases of obstruction from vitelline remains, adherent appendices, and slits were found among men. The percentage of bands of intestinal origin and those of pelvic origin was about equal in the two sexes.

The age at which the obstruction took place is shown in the following table: —

Years of Age.	Adhesions.	Vitelline Remains.	Appendix.	Slits.	Pouches.	Tube.	Total.
1—5		2					2
5—10		3	1				4
10—15	2	2	1				5
15—20	6	2		1			9
20—25	12	5					17
25—30	8	4	1	1			14
30—35	4			2			6
35—40	1	1	1				3
40—45	6		1				7
45—50	2						2
50—55	7		1				8
55—60	1			1	2	1	5
60—65	3			1			4
65—70	2						2
70—76	1						1
	55	19	6	6	2	1	89

Strangulation in early youth was, hence, relatively uncommon. Where it occurs it is most likely to result from vitelline remains. At least 40% of the cases of strangulation occurred between the ages of fifteen and thirty years, and adhesions as the cause of the same were more than twice as frequent as vitelline remains. After the age of thirty years adhesive bands are the usual cause.

In the etiology of adhesions a record of previous peritonitis, or perityphlitis, was found in ten of the cases, about one-sixth of all, and of an associated hernia in seven instances. In a small fraction errors in diet, violent muscular exercise, blows upon the abdomen, surgical operations for pelvic caries and cancer of the bowels, were important in the etiology.

In nearly one-half of the cases of vitelline remains previous attacks of abdominal pain were recorded, and in one instance there was the history of a yellowish discharge from the navel in infancy. One-half of the cases of adherent appendix were preceded by an attack of perityphlitis. Evidence of a pre-existing attack of intestinal obstruction was

[1] Brinton gives forty-three per cent. of intussusception in his table of six hundred cases of intestinal obstruction by this lesion, bands, adhesions, diverticula, or peritoneum external to the bowel, strictures (including a few tumors) involving the intestinal wall, and torsion of the bowel on its axis. *Op. cit.*, 38.

found in one case of mesenteric slit; another was preceded by chronic dysentery for a year. A case of protrusion of the intestine through an opening in the coronary ligament suffered, three years before, from a severe attack of inflammation of the bowels, with intervening colic and repeated diarrhœa. The immediate attack of obstruction in two cases of mesenteric slit followed a fit of coughing in the one and took place at the stool in the other.

Evidence of antecedent peritonitis thus existed in 13% of the cases, the band then being an adhesion or an appendix. In 7% of the cases a hernia was associated with the band. In 80% of the cases there was no factor of diagnostic importance.

Abdominal pain was the first important symptom noticed in 82% of all the cases of strangulation. The percentage of its frequency in each variety of strangulation is shown as follows: —

In Adhesions	in 50	cases =	79	per cent.	of all the case.
" Vitelline remains	" 18	" =	86	"	"	"
" Adherent appendix	" 6	" =	100	"	"	"
" Slits	" 6	" =	100	"	"	"
" Pouches and openings	" 2	" =	66	"	"	"
	82					

It was usually sudden, severe, rarely slight, and was described as colicky. It was only exceptionally accompanied, at the outset, with tenderness. In the majority of cases it was simply stated to be abdominal.

It was located at the navel in eight instances, at the epigastrium in five, in the right iliac fossa in four, at the hepatic flexure and in the right hypochondrium each in three cases, in the left iliac fossa in two, in the lumbar region, splenic flexure, along the spermatic cord, and in the spine and back each in one case. An exact localization of the incipient pain was thus recorded in 29% of all the cases. There seems to be no diagnostic importance to be attached to the seat of pain as evidence of strangulation, or of its special cause, as will become apparent when the seat of the obstruction is stated.

The initial pain was found to be early associated with nausea or vomiting, either alone or together, in 69% of the cases. The date of appearance, and the frequency in the special varieties of strangulation are given in the following table:—

Date.	Adhesions.	Vit. remains.	Appendix.	Slits.	Pouches, etc.	Total.
1st day	21	13	5	2	1	42
2nd day	7	4	1	1		13
3rd day	2			1		3
4th day	2				1	3
6th day	1					1
Not given	7					7
	40	17	6	4	2	69

A comparison of these figures shows the occurrence of this symptom on the first day in 68% of those cases in which it was possible to determine the date with accuracy. It took place on the first day in at least one-third of the cases of adhesions, in more than one-half of those of vitelline remains, in five-sixths of those of adherent appendix, and in one-third of those of peritoneal slit. The proportion is evidently much greater when the number of cases is considered in which the date of occurrence could be definitely ascertained. The relative frequency then becomes more than one-half in the case of adhesion, two-thirds in those of vitelline remains, five-sixths in adherent appendix, and one-half in strangulation by a slit.

Its occurrence on the first day is most suggestive of an adhesion, a vitelline cord or diverticulum, an appendix, a slit, or a pouch, in the order stated.

The occasional absence of nausea or vomiting is noteworthy, and is mentioned in two cases of strangulation by adhesions, one of which terminated fatally, the other in recovery, after laparotomy.

The vomit, as in all cases of intestinal obstruction, was usually composed, at the outset, of the food last taken. It then became mixed with bile, eventually yellow, and finally fecal. It was frequently noticed that the vomiting only became constant when material was persistently taken into the stomach.

Fecal vomit is a term which is somewhat loosely applied, and is in no way to be regarded as other than conventional. There was no evidence to warrant the idea that the contents of the large intestine were ever vomited. The distinction between a yellow vomit and the fecal or stercoraceous variety seems to depend chiefly upon the length of time during which a pyloric insufficiency has existed. It is quite probable that among the records of fecal vomit are those in which this term was applied to the ejection of a yellow, odorless, intestinal fluid. The term should be more exclusively applied to the offensive ejections which have remained sufficiently long above the point of obstruction to become fetid. The following table shows the date of this intestinal vomit in thirty-seven cases:—

Date.	Adhesions.	Vit. remains.	Appendix.	Slits.	Total.
2nd day	2	2			4
3rd day	4	2	2		8
4th day	3	1			4
5th day	6			1	7
6th day	2	3			5
7th day	2	1			3
8th day	1				1
9th day	2				2
10th day	1	1			2
13th day				1	1
Not given	5	4	1		10
	28	14	3	2	47

The vomit thus became fecal most often on the third and fifth days, although on these dates in only about one-fifth of the cases in which definite dates were given.

Tympany is next in importance to abdominal

pain and vomit as a symptom of obstruction from strangulation. Its occurrence in 56% of all cases is recorded, and the date of its appearance is given as follows: —

DATE.	Adhesions.	Vit. remains.	Appendix.	Slits.	Pouches.	Total.
1st day	2					2
2nd day	2	1	2	1		6
3rd day	4	2	1	1		8
4th day	4	2		1	1	8
5th day	4	2	1			7
6th day	5	2			1	8
7th day	2	1				3
8th day	1					1
9th day		1				1
10th day		1				1
11th day	2					2
13th day	2					2
Not given	4	1	1	1		7
	32	13	5	4	2	56

Tympanitic distention of the abdomen thus occurred in more than one-half of the cases of strangulation, and was most frequent from the second to the sixth days inclusive. It may be wholly absent as late as the eighth day, and may be much on the first day. It was sometimes enormous during the first week, but much more often slight or moderate. The distended abdomen was not especially tender to the touch.

An abdominal tumor was sometimes noticed in cases of strangulation, and a distinction is to be drawn between tympany and tumor, although tympanitic intestines may be the cause of each. Under the general head, tumor, are included circumscribed, distended, visible intestinal coils as well as local swellings not thus characterized. The latter were either palpable or their limits were determined by dulness on percussion in an elsewhere resonant and unusually distended abdomen. Such tumors and visible coils occurred as follows in the cases of strangulation: —

	TUMORS.	VISIBLE COILS.
Adhesions	4	7
Vit. remains	4	3
Appendix	1	1
Slits	1	
	10	

Thus in less than one-fifth of the cases tumors were to be recognized. The numbers are not sufficient to serve any purpose of differential diagnosis.

Fever was noted in 22% of all the cases. It rarely occurred before the second day, was sometimes absent altogether, and, when present, the temperature was below 100° F. in nearly one-half of the cases. Its occurrence and intensity were of no positive value in the diagnosis of obstruction from strangulation.

Hiccough was a symptom of such infrequent record as not to demand any especial attention.

As a rule no mention was made of any peculiarities of the urine or its flow. The latter was sometimes mentioned as scanty during the first few days and after the tenth day, while it was often stated as normal on the thirteenth day. Its composition was usually noted as normal; occasionally it was reported to contain albumen or indican. The cases furnished no evidence that any alteration of the quantity or quality of the urine is of any diagnostic value.

In like manner with regard to collapse. The date of its occurrence was given in 23% of the cases, but the figures are too few to aid much in fixing upon the time when all efforts at purely medical treatment shall cease.

DATE.	Adhesions.	Vit. remains.	Appendix.	Pouches, etc.	Total.
1st day	1				1
2nd day	2				2
3rd day	2	1	1		4
4th day		1			1
5th day	2	1	1		4
6th day	1	1			2
7th day	1	1			2
9th day	1	2			3
10th day		1			1
11th day	1			1	2
13th day	1				1
	12	8	2	1	23

The occurrence of collapse is not to be regarded as necessarily indicative of a fatal termination, as in several cases recovery followed laparotomy, where collapse was noted at or before the time of operating.

The bowel obstructed was recorded as follows in 74% of the cases: —

INTESTINE OBSTRUCTED.	Adhesions.	Vit. remains.	Appendix.	Slit.	Pouches, etc.	Total.
Small	39	15	6	4	2	66
Large	5			2	1	8
	44	15	6	6	3	74

The part of the intestine obstructed in strangulation, as determined in fully three-fourths of all the cases, is the small intestine in nearly 90% of the cases, and the large in 10%.

The region of the abdomen in which the strangulating object was found was as follows in 72% of the cases: —

	Adhesions.	Vit. remains.	Appendix.	Slit.	Pouches, etc.	Total.
Right iliac fossa	19	21	6	1	1	48
Pelvis	7				1	8
Left iliac fossa	5			1		6
Left lumbar region	3					3
Right lumbar region	2					2
Umbilical region	2					2
Right hypochondrium	1				1	2
Left hypochondrium	1					1
	40	21	6	2	3	72

The position of the strangulating object was thus in the right iliac fossa in 67%, and in the lower abdomen in 83%, of the cases in which its position was given. It was present in the lumbar and umbilical regions in 10%, and in the upper abdomen in 7%.

It is obvious that an absolutely exact diagnosis of obstruction from strangulation is only to be made by a post-mortem examination or a laparotomy. From this point of view the mortality is total unless operative interference has been tried with success. Of one hundred and one cases, seventy-five died and twenty-six recovered.

The following tables were prepared to show the date of death in the absence of surgical treatment, and the relation of deaths to recoveries after surgical interference.

Date of death in thirty cases of strangulation under purely medical treatment:—

Date.	Adhesions.	Vit. remains.	Appendix.	Slit.	Pouches, etc.	Total.
2nd day	4	1	1	1		7
3rd day	3	1		1		5
4th day	2	1			1	4
5th day	1					1
6th day	1	1		1		3
8th day	2					2
9th day		2				2
10th day	1					1
11th day	2				1	3
18th day				1		1
37th day		1				1
	16	7	1	4	2	30

It is evident that death occurred from the second to the fourth days inclusive in more than one-half of the cases where no surgical treatment was applied.

Operative interference took place in 67% of the cases, and with the following result:—

Date.	Adhesions.	Vit. remains.	Appendix.	Slit.	Pouch, etc.	Tumor.	Total.	Death.	Recovery.
1st day	1						1	1	
2nd day	1	1					2	1	1
3rd day	2		1				3	3	
4th day	2	1		1			4	4	
5th day	5	2	2	1		1	11	5	6
6th day	6	1	1				8	3	5
7th day	8						8	6	2
8th day	2	1					3	1	2
9th day	3	1					4	3	1
10th day	2	1					3	1	2
11th day	2	2			1		5	5	
12th day	2						2	2	
13th day	2						2	1	1
14th day		1					1	1	
16th day		1					1		1
25th day	1						1		1
Not given	6	1	1				8	4	4
	45	13	5	2	1	1	67	41	26

The percentage of recoveries after surgical interference in cases of strangulation was 39%.

(To be continued.)

NERVOUS AFFECTIONS FOLLOWING INJURY.[1]

("CONCUSSION OF THE SPINE," "RAILWAY SPINE," AND "RAILWAY BRAIN.")

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BEFORE discussing the question further it is essential to give some sort of a definition of what is meant by the two vague terms hysteria and neurasthenia. Neither of them can rightly be regarded as a disease. They are both conditions of the individual, the latter being well defined as "a bodily condition which is frequently associated with various chronic disorders, and not rarely coexisting with perverted functional activity of the nervous centres."[34] These states are often erroneously spoken of as if they were distinct diseases, and the names are often used as convenient "dumps" for cases where we can make no diagnosis. Hysteria is the state in which ideas can control the body and produce morbid changes in its functions,[35] while neurasthenia is a state of exhaustion from over-strain. The two states may be combined, or may complicate other affections. There is a hysterical symptom-complex that is so definite that it may fairly well be spoken of as a disease, and that is the group of symptoms that make up the *grande hystérie* of Charcot. To that alone I will apply the term hysteria; other

[1] Concluded from page 425.

[34] H. C. Wood. Nervous Diseases and their Diagnosis, p. 18.

[35] P. J. Möbius. Ueber den Begriff der Hysterie. Centralblatt f. Nervenheilkunde, 1st Feb., 1888.

conditions I will speak of as the hysterical or neurasthenic states.

That psychical disturbance can produce functional paralyses has been known for many years, and these paralyses have been discussed under many different names, such as "emotional paralysis,"[36] "paralysis dependent upon idea,"[37] or the "Schrecklähmung" of the Germans.[38] It was reserved for Charcot,[39] however, to give us the explanation of their origin. He has found that in certain hysterical patients at La Salpêtrière, who were easily hypnotizable, he could produce, by suggestion when hypnotized, paralyses precisely similar to those seen in other patients as the result of an injury. He therefore suggests that the mental state occasioned by the nervous shock of the accident is similar to the somnambulistic stage of hypnotism — there is an "obnubilation of the *ego*." The idea of injury, occurring in this state of nervous shock or obnubilation, acts as a traumatic suggestion, producing the same results as ordinary suggestion in a hypnotized patient. The patient develops his own idea and suggests it.

Charcot's brilliant reasoning proves beyond question the existence of a traumatic hysteria in his cases, but, after a careful study of these cases, and of others collected by Rendu,[40] Poupon,[41] Lyon,[42] and Berbez,[43] I am unable to trace any resemblance between them and the cases cited above, or the cases reported by German observers. Charcot's patients present either typical grand hysteria, with hemianæsthesia of the skin and organs of special sense, and with hystero-epileptic attacks with grand movements, passionate attitudes, and the *arc de cercle*; hysterical monoplegia; or hysterical articular neurosis. The characteristics of hysterical monoplegia are paralysis, with or without contracture; anæsthesia of the paralyzed limb, not following any nerve tracts but having a sharp line of demarcation that encircles the limb like a bracelet; little or no atrophy, and normal electrical reactions. The joint affection is that first described by Brodie, simulating severe organic disease, and attended with great pain, cutaneous hyperæsthesia, and tenderness and stiffness of the joint, the stiffness disappearing under ether. The diagnosis of these conditions is not difficult, and in the cases reported above they were not present. I have seen all three of the conditions, — grand hysteria, hysterical monoplegia, and articular neurosis; but I have not yet seen these conditions appearing as the result of injury.

The researches of Thomsen and Oppenheim have shown conclusively that hemianæsthesia is not pathognomonic of hysteria. Charcot formerly held[44] that general anæsthesia was rare in hysteria, that the anæsthesia was usually unilateral, the median line forming the limit. This claim has since been abandoned, for many of his cases show anæsthesia of only one limb, and Berbez has found hemianæsthesia in only thirty-eight out of ninety-three cases. The commonest symptom in sensory anæsthesia — a point in which both French and German observers agree — is the peripheral limitation of the field of vision. Thomsen and Oppenheim have found sensory anæsthesia, which in many cases was unilateral, in epilepsy, hysteria, neurasthenia, nervousness, chorea, "railway-spine," multiple sclerosis, Westphal's pseudo-sclerosis, organic cerebral disease, certain psychoses, and other conditions; peripheral limitation of the visual field being the most constant symptom. Furthermore, the investigations of the committee of the Société de Biologie, consisting of Charcot, Luys, and Dumontpallier, have shown[45] that in hemianæsthesia due to undoubted organic disease of the brain the phenomena of transfer can sometimes be excited by the application of metals. Thus it seems that not only is hemianæsthesia not pathognomonic of hysteria, but also that transfer phenomena in hemianæsthesia are not pathognomonic of hysteria.

Thomsen and Oppenheim oppose the hypothesis of hysteria as an explanation of their cases on other grounds. To their argument that the anæsthesia is fixed and unvarying, and that the disposition is not that of the hysterical, Charcot has replied by citing cases where the anæsthesia in hysterical patients has not varied for years. Oppenheim's further objections, however, seem to be more conclusive. He finds that the patients are anxious, hypochondriacal, and depressed; complaining of headache, vertigo, faintness, and occasionally of epileptiform attacks. They have pain in the back, anæsthesia, and peripheral limitation of the field of vision; their movements are slow and feeble; and they try to guard their spines from jarring; there is often tremor; the vesical functions may be disturbed; the pulse is often rapid; in one case Oppenheim found unequal pupils which did not react to light, in another optic atrophy. This latter symptom is not very rare; it has been noted, for example, in cases reported by Rigler,[46] Walton,[47] and Wharton Jones.[48] Not only are these symptoms not hysterical, but they are not even functional; and Oppenheim justly argues that if they be ranked as hysterical the firmest pillars of our knowledge are overturned. Westphal,[49] too, asserts that these cases cannot be brought under the rubric of hysteria.

Within a few months Oppenheim has reviewed the subject again,[50] and concludes that the cases with signs of undoubted organic disease, immobile pupils, optic atrophy, and vesical symptoms are in the minority, and that most cases represent, not a typical neurosis like hysteria or neurasthenia,

[36] R. B. Todd. Clinical Lectures on Paralysis.
[37] J. Russell Reynolds. Remarks on Paralysis and other Disorders of Motion and Sensation dependent on Idea. British Medical Journal, 6th Nov., 1869.
[38] E. Leyden. *Op. cit.*, i. 173.
[39] J. M. Charcot. *Op. cit.*, iii. 355, 392 *et seq.*
[40] H. Rendu. Contribution a l'histoire des monoplégies partielles du membre supérieur, d'origine hystero-traumatique. Archives de Neurologie, Sept., 1887.
[41] H. Poupon. Paralysies hystero-traumatiques. L'Encéphale, Jan., 1886.
[42] G. Lyon. Note sur l'hysteric consécutive aux traumatismes graves. L'Encéphale, Jan., 1888.
[43] P. Berbez. Hystérie et Traumatisme. Paris, 1887.
[44] J. M. Charcot. Leçons sur les localisations, etc., p. 115.
[45] Premier Rapport fait á la Société de Biologie sur la métalloscopie et la métallothéraplé du Dr. Burq. Gazette Médicale, 28th April, 1877.
[46] J. Rigler. Ueber die Folgen der Verletzungen auf Eisenbahnen, insbesondere des Verletzungen des Rückenmarks. Berlin, 1879.
[47] G. L. Walton. Art. cit., Boston Medical and Surgical Journal, 11th Oct., 1883.
[48] Quoted by Eichhorst. Handbook of Practical Medicine. Am. Trans., iii., 144.
[49] Archiv f. Psychiatrie u. Nervenkrankheiten, xvii. 282. 1886.
[50] H. Oppenheim. Wie sind die Erkrankungen des Nervensystems aufzufassen, welche sich nach Erschütterung des Rückenmarkes, insbesondere Eisenbahnunfällen, entwickeln? Berliner klinische Wochenschrift, No 9, 27th Feb., 1888.

but a more general and complex psycho-neurosis, from which the patient never recovers.

In the cases reported above the leading symptoms were certainly not those of hysteria. The psychical conditions noted — depression, anxiety, loss of memory, mental impairment; the tremor, the exaggerated reflexes, and the swaying with closed eyes; the pronounced paræsthesia; the vertigo and headache (persistent headache being confessedly not a symptom of hysteria);[51] nystagmus; vesical paresis — all these point to something beside hysteria or the hysterical state. Moreover, incontinence of urine, nystagmus, and exaggerated reflexes are symptoms which we should expect to find in organic rather than in functional disease. Case XI., especially, is strongly suggestive of disseminated sclerosis.

It seems to me that the theory of an organic lesion, possibly the lesions suggested by Westphal, is the one which is the most satisfactory in many of these cases. Bramwell,[52] who is certainly sceptical as to the frequency of organic change, suggests that there may be multiple capillary hæmorrhages in the brain and cord, which give rise to inflammatory processes, and finally to sclerosis. These hæmorrhages are so small as easily to escape notice, and later, if there be sclerosis, the recent methods of staining would be necessary to detect it.

An interesting corroboration of this theory is afforded by the general lesions found in the bodies of some of those killed at the great railway accident at Charenton in 1881. In several cases Vibert[53] states that there were found very abundant punctate hæmorrhages in the upper part of the body, and suggests that they arose from lesion of the nervous centres. Willigk[54] found in one case dilatation of the finest vessels, with infiltration into the perivascular spaces, and degeneration of the coats of the vessels. Page,[55] however, asserts that in these railway cases "Mors silet;" which is as correct as many of his statements. Autopsies and experimental pathology furnish us with various facts which indicate an organic change. In regard to experiment, Mendel,[56] believing that hyperæmia was an important feature of the early changes in general paralysis, sought to excite an intense chronic hyperæmia in dogs. For this purpose he fastened the animals on a revolving table, with their heads toward the periphery. Rapid revolutions, 125 to 130 a minute, continued for half an hour, produced punctate hæmorrhages. Slower revolutions (110) for six minutes a day, produced, after some weeks, symptoms of general paralysis, and, on killing the animals, he found adhesions between the skull, the meninges, and the brain, an increase in the nuclei and cells of the glia, an increase in the number of vessels, and changes in the ganglion cells. This condition finds a clinical representation in a case recently reported by Bernhardt,[57] where symptoms of general paralysis developed gradually after a railway injury. Fürstner[58] has repeated Mendel's experiments, with fewer revolutions (60 to 80) for a shorter time (1 to 2 minutes) and continued for months. He found double primary degeneration of the lateral columns and of a particular part of the posterior columns, changes in the optic nerves, and changes in the brain similar to those found by Mendel. Similar changes in the lateral columns have been found after death, in patients who had suffered from "concussion," by Dumenil and Petel, and also by Edes,[59] who has called attention to the occurrence of symptoms of spastic paralysis in certain cases.

In undoubted organic disease, however, no matter what the cause may be, there are often symptoms which are due to a superinduced hysterical or neurasthenic state, and these symptoms may so overlay the symptoms due to the structural changes as to render the diagnosis extremely difficult. I need not rehearse these symptoms; they were present in several cases where I believe there was also organic disease, and I have seen organic disease not due to injury so masked by hysterical or neurasthenic symptoms as to make the case a puzzle.[60] One symptom of the neurasthenic state is not very rare, and that is the hyperæsthesia over the spinous processes of the vertebræ.

Apart from this mixture of functional and organic symptoms we must, however, recognize the fact that there are two great classes of cases which are the result of railway accidents and other injuries,[61] one where the symptoms are due, as I have endeavored to prove, to organic changes in the central nervous system; the other where the symptoms are due to functional disturbance.

As a subdivision of this latter class may be mentioned the more purely psychical disturbances, which are not rare. Naturally these are seen more markedly after railway accidents than after the accidents of ordinary life, such as falls. The horror of a scene like that at Roslindale is not soon forgotten by the ordinary spectator, and to one who has been an active participant, with the terror of sudden death or some fearful injury imminent, the effect must be still greater. Immediately after the accident at Charenton Vibert[62] noted a pronounced psychical change in almost all of the survivors, characterized by nervous excitability, insomnia, frightful dreams when sleep did come, tremor, headache, and a sort of semi-consciousness or cerebral automatism. This condition, he states, disappeared after a short time,— a few days or weeks,— but I believe that such disturbances are often of much longer duration; at any rate I have known the psychical shock of a railway accident to be apparent for a good many months afterwards.

[51] J. M. Charcot. Leçons sur les maladies du système nerveux, iii. 368.
[52] B. Bramwell. Diseases of the spinal cord, 2nd ed., p. 312.
[53] Ch. Vibert. Etude médico-légale sur les blessures produites par les accidents de chemin de fer. Paris, 1888.
[54] A. Willigk. Anatomischer Befund nach Hirnerschütterung. Vierteljahrschrift für die prakt. Heilkunde, cxxviii. 19, 1875.
[55] H. W. Page. *Op. cit.*, p. 82.
[56] E. Mendel. Ueber paralytischen Blodsinn bei Hunden. Ref. in Neurolog. Centralblatt, 15th May, 1884.
[57] M. Bernhardt. Beitrag zur Frage von der Beurtheilung der nach heftigen Körpererschütterungen, in specie Eisenbahnunfällen, auftretenden nervösen Störungen. Deutsche medicinische Wochenschrift, 29th March, 1888.
[58] Quoted by Hoffman, art. cit.
[59] R. T. Edes. The somewhat frequent occurrence of Degeneration of the Postero-lateral Columns of the Spinal Cord in so-called Spinal Concussion. Boston Medical and Surgical Journal. 21st Sept., 1882.
[60] For a fuller discussion of this point see E. C. Seguin's article on Hysterical Symptoms in Organic Nervous Affections, in his Opera Minora, p. 180.
[61] F. Kalliefe. Ueber Rückenmarkserschütterung nach Eisenbahnunfällen (Railway-spine), p. 27.
[62] C. Vibert. *Op. cit.*, pp. 11, 35

Moeli[63] has noted some of the more permanent psychical conditions. The patients become sensitive to sensory impressions, and they are irritable, anxious, and depressed. They are easily fatigued, weak, nervous, tearful and tremulous; they are unstable and incapable of mental application, and all thought becomes difficult. They generally have headache, which is increased by mental effort or by slight amounts of alcohol. Moreover they are dominated by the thought of the accident, which is a constant source of oppression to them and haunts them night and day. Thomsen[64] has lately described a case under the name of "acute railway brain," where there was a slightly different symptom-complex. Immediately after the accident there were maniacal symptoms, with absolute and complete anæsthesia, confusion, and delusions of persecution. Later the maniacal symptoms disappeared, the anæsthesia was less complete, but the man became lachrymose, hypochondriacal, depressed, irritable, and unable to work on account of headache and weakness.

Beside these psychical disorders there are other manifestations of functional nervous disease. I believe that hysteria (the "grand hysteria" of Charcot) is only rarely the result of injury, but there is a large class of cases which, after injury, suffer from symptoms which are a part of the neurasthenic state. After severe concussion, or the psychical trauma of injury, the victim is thrown into a pronounced neurasthenic state, which may last for years. His nervous system is utterly shattered, or, to use the phrase of the day, he is "all broken up." He is nervous, emotional, irritable, perhaps hysterical; he is overcome by trifles; he is exhausted by the slightest effort. He may present no objective symptoms, but he remains an utter wreck. There is a general weakening, and a decline from the normal standard in the functions of the central nervous system, especially in the domain of the thought, the will, and the emotions.[65] The symptoms may be milder, as in Case XII. Here, the patient finds himself changed: instead of being capable of continued exertion or strain, he is easily upset, trifles annoy him, he is irritable and quick tempered, he has lost the power of rebounding after pressure, of maintaining the calm, good-tempered spirit which perhaps he had before; his sleep is not so sound, he starts when a door slams, his children annoy him, he is fretful and fault-finding. It may be that such a man is able to work as well as before, and to earn as much money, but, if he be in some responsible position, perhaps his judgment is less sure, or his bearing toward his associates less agreeable; he is no longer a "good fellow," but nervous and disagreeable. These things, of course, are trifles, for which no jury would award damages; but they are trifles which mark an enfeebled nervous system, and it is these very trifles which are like sand in the bearings of the carriage: they decide whether life is agreeable or disagreeable, and they are trifles which may continue for years; in fact, the man may never recover his old buoyancy, his consideration for others, and his good nature.

I have not spoken as yet of the subject of strain of the muscles of the back, upon which so much stress has been laid by Page. It is, I believe, the chief source of the marked rigidity of the spine so often seen, and by it or by "spinal irritation" is to be explained the spinal tenderness so often met with, for spinal tenderness has as little to do with disease of the cord as pain in the back has to do with renal disease. Although, however, it is often present, I believe that it usually exists as a complication and not as the sole cause of the symptoms. The first two cases reported are good examples of muscular strain, but in neither of them was that the only trouble. The first man had paræsthesia in the arms, vertigo, psychical disturbances, and vesical symptoms, and the second had vesical disturbance and impotence. Page[66] seeks to ascribe incontinence and impotence to the strain alone, but I am unwilling to accept his conclusions. With strain of the muscles of the back there may be a little difficulty in emptying the bladder, but, when there is pain only on motion, I cannot see how the strain should paralyze the sphincters. In severe twists of the spine the nerves may be implicated, and it is possible that some of the nerves of the vesical plexus may be among them, yet that is by no means clear. Impotence is so common in all conditions of pain or weakness as to be of no significance. Strain of the muscles may often present such prominent symptoms as to mask the symptoms of nervous disturbance that lie beneath, yet I believe that careful inquiry will, in most cases of "concussion," reveal symptoms referable to the nervous system. As to Page's claim[67] that these cases do not recover owing to excessive doses of bromide of potassium, it is too much the argument of the railway attorney to merit consideration.

Of differential diagnosis I will say but little, because there is so much to say that it might easily fill a book; nor will I dwell upon the possibility of simulation, which has been so prominent in the minds of some writers as almost to conceal the fact that there was a real affection to be simulated. It is perhaps needless to add that all objective symptoms which indicate structural disease should be noted with care: the pupils and the optic nerve, the electrical reactions, the condition of the reflexes, the presence of tremor, especially fibrillary tremor of the face and tongue, ataxia, and Romberg's symptom. It should also be borne in mind that peripheral limitation of the field of vision, which is regarded by Thomsen and Oppenheim as one of the most constant attendants upon anæsthesia, and is considered by Charcot one of the chief stigmata of hysteria, may be the earliest recognizable manifestation of atrophy of the optic nerve.

In spite of the most rigid examination, however, there are many cases which furnish us no objective signs, notably the cases of purely psychical disturbance, and the conditions of neurasthenia, the purely "functional" affections. Here we can say only this, that if the patient's statements be true, he has suffered severe and perhaps incurable injury. If, in such cases, we had the opportunity of

[63] C. Moeli. Ueber psychische Störungen nach Eisenbahnunfällen. Berliner klinische Wochenschrift, 7th Feb., 1881.
[64] R. Thomsen. Vorstellung eines Falles von acutem schweren Railway Brain. Verhandl. d. Gesellschaft der Charité-Aerzte im Berlin. Berliner klinische Wochenschrift, 1st Aug., 1887.
[65] M. Bernhardt. *Art. cit.*

[66] H. W. Page. *Op. cit.*, p. 182.
[67] H. W. Page. On the Abuse of Bromide of Potassium in the Treatment of Traumatic Neurasthenia. Medical Times and Gazette, 4th April, 1885.

long-continued and constant observation, we would be in a better position to judge of the patient's veracity; but it may be as difficult to decide, and may require as long-continued study, as in certain cases of insanity.

The prognosis in these cases varies, of course, with the character of the affection. Although meningeal hæmorrhage may be absorbed, other distinct structural affections of the brain or cord, of course, seldom recover. A noteworthy instance of recovery after paralysis of four years' duration is the case reported a number of years ago by Dr. Webber.[68] The prognosis of neuritis, which was present as a complication in several of the cases I have reported, depends, of course, upon the amount of injury to the nerve as shown by the electrical reactions. Strain of the muscles of the back, by itself, is an affair of long duration, and, as a complication, I have found it very persistent, lasting several years. Never having seen grand hysteria as a result of trauma, I am unable, from my own experience, to judge of the prognosis, but I see no reason why, when a person is once thrown into that state, from injury, he should recover, in the sense of getting out of the state, any quicker than one who gets into it from other causes, except that the absence of a hereditary nervous taint is in his favor. I suspect, however, that comparatively few cases of hysteria are induced by injury in persons who have not the taint. Charcot's cases are chiefly "hereditaires," but Berbez and Lyon are in doubt as to the preponderance of hereditary taint in the cases reported. Their conclusions are less decisive, however, as many persons, without heredity, may be of a neuropathic type. I find my own opinion supported by the recent testimony of Bataille: "It is apparent that predisposition is alone capable of making us comprehend the development of these attacks of hysteria." Of course in hysterical cases the individual symptoms — anæsthesia, paralysis, contracture — may disappear, but the underlying state remains, capable of reproducing all the symptoms at short notice.

What has been said of the hysterical state holds true in a measure of the neurasthenic state. Where the symptoms are mild, and there is no neurotic taint, the patient's chances of recovery are of course better. Even in severer forms of neurasthenia the prognosis is not utterly bad, although, unfortunately, there are many cases that never recover, whether the neurasthenia be of traumatic origin or not. Nevertheless in many cases, even though there is so great improvement that the patient can return to work and do as much as before, there are still the subtler changes of which I have spoken which show that the recovery is not absolute.

The prognosis of the purely psychical disturbances is also grave. Hartmann has called attention to the fact that psychoses may develop a long time after an injury, especially if it has caused headache, vertigo, irritability, and a loss of power of intellectual application, as was seen in Case IX. Krafft-Ebing[69] also shows that injury may make the brain the place of least resistance; there is increased irritability, intolerance of heat or alcohol, and disturbance of vaso-motor innervation, which favors the development of psychoses. Thomsen also regards the prognosis of his "acute railway brain" as grave.

In the majority of cases the symptom-complex is something like this: the patient has headache and vertigo; he is depressed, irritable, and hypochondriacal, with a diminished power of application; he may have some visual disturbance, he often has a contracted field of vision and occasionally optic atrophy; there is some tremor and perhaps incoordination; he has anæsthesia, usually not limited to one half of the body, and with it numbness and prickling; his movements are slow and weak; his tendon reflexes are exaggerated; there is often some lack of control over his bladder; and he may have pain and stiffness in the back from muscular strain. Here I believe the condition is due to a disseminated miliary sclerosis, or, in the early stages, to a hæmorrhagic or inflammatory process. The prognosis is like that of multiple sclerosis. With rest, freedom from excitement, — such as comes when litigation is over and the anxiety about money matters is settled, — and judicious treatment the patient may improve. The same holds true of tabes dorsalis. The ultimate prognosis is bad. Oppenheim has never met with a recovery; Gowers[70] has found a good many cases where "damages" have not brought about a cure, and considers that where there has been a late or gradual onset of symptoms there is far less tendency to arrest or subsidence than with earlier lesions; and Strümpell,[71] in his latest edition, warns us against regarding these conditions as mild or insignificant. "The patients actually suffer greatly from them, and the suspicion of exaggeration and simulation is certainly much more rarely justified than it is pronounced."

The following conclusions seem justifiable: —

(1) Concussion of the spine, in the strict sense of the term, although probable, is still a matter of doubt.

(2) Muscular strain, spinal irritation, and peripheral neuritis are not uncommon complications.

(3) Injury may give rise, not only to gross mechanical lesions of the central nervous system, with symptoms coming on soon after the accident, but also to typical chronic degenerative processes of insidious onset.

(4) Injury may also give rise to various functional affections of the nervous system, including psychoses, hysteria, and neurasthenia.

(5) Hemianæsthesia is not pathognomonic of hysteria, but is found in other conditions.

(6) Psychical disturbances — anxiety, hypochondriasis, depression, emotional disturbance, and lack of power of application — may exist alone or in conjunction with other affections.

(7) The neurasthenic state is often produced by injury, but true hysteria is rare.

(8) Both the hysterical and the neurasthenic states may be superimposed upon organic disease, obscuring the diagnosis.

(9) There is a fairly typical symptom-complex, with psychical disturbances, paræsthesia, anæsthesia, slow and feeble movements, exaggerated

[68] S. G. Webber. Recovery after four years' paralysis following railroad injury. Boston Medical and Surgical Journal, 18th July, 1872.

[69] R. v. Krafft-Ebing. *Op. cit.*, i. 166.

[70] W. R. Gowers. *Op. cit.*, i. 453.

[71] A. Strümpell. *Op. cit.*, ii. 1, 164.

reflexes, etc., which is not uncommon, and is probably due to organic disease.

(10) The prognosis of these conditions is grave. Improvement is not uncommon, but complete recovery is rare.

PUERPERAL ANÆMIA, AND ITS TREATMENT WITH ARSENIC.

BY WILLIAM OSLER, M.D.,

Professor of Clinical Medicine in the University of Pennsylvania.

THE first article on pernicious or essential anæmia contributed to literature was by Dr. Walter Channing, of Harvard, who, in the *New England Quarterly Journal* for 1842, published an article with the title, "Notes on Anhæmia, particularly in connection with the Puerperal State, and with Functional Diseases of the Uterus, with Cases." This was a year before Addison, as stated by Stephen Mackenzie, had first publicly taught the existence of idiopathic anæmia.

In 1853 Lebert described cases of what he called "puerperal chlorosis." In the second volume of *Archiv für Gynekologie* Gusserow described similar cases, and his paper, with that of Biermer's, which appeared about the same time, 1872, aroused a deep interest in this subject.

The importance of this etiological factor in pernicious anæmia is shown by the fact that of ninety-one observations collected by Eichhorst, the symptoms in twenty-nine cases developed in connection with pregnancy; of these, nineteen occurred during the pregnant state and ten after delivery.

Of twenty-one cases of pernicious anæmia of which I have notes, nine were in women, in five of whom the condition developed post-partum. Of these cases, three recovered; of one I am doubtful, as the patient removed to a distance and has not since been heard from; the fifth case I have here given in full, as illustrative of certain important points in connection with the treatment of this condition.

Amelia T., aged thirty-five, domestic, was admitted to the medical wards of Philadelphia Hospital on 25th February, 1888. Nothing of note in family or previous personal history. In October, 1887, she was confined of her fourth child — easy delivery. She was well through her pregnancy, but in last month had suffered with bleeding piles. She was up and about two weeks after delivery, nursed the baby, but was very pale and weak. She was discharged in about six weeks. She never regained color after her confinement and had many spells of fainting, once or twice having fallen in the street. After January 1st this condition grew worse, and diarrhœa set in. When admitted she was in a condition of profound anæmia, and had severe diarrhœa with irregular fever. She was placed on Tr. perchl. Fe, gtt. 20, t.i.d. She remained in bed and had not improved; and when I saw her first on 17th April she was in the following condition: —

Profound anæmia; face and general cutaneous surface has slight subicteroid hue; fat is fairly well retained, though the arms look thin, conjunctivæ pearly, tongue extremely blanched. She is unable to sit up on account of the fainting. Has three or four movements of the bowels daily. Pulse 120°, small, jerky. Peripheral veins not very full. Apex beat of heart at fourth interspace; visible pulsation in subclavians and carotids. There is a rough thrill with first sound. Cardiac dulness from lower border third rib. On auscultation both sounds heard at apex with much echo; loud systolic murmur, propagated to axilla; also heard very plainly along left sternal border. Distinct systolic murmur at aortic cartilage. Second sound much accentuated.

Lungs normal. No enlargement of spleen or liver. Tenderness on pressure over abdomen. Glands are not enlarged. Fever range of 2 or 3 degrees daily. Blood very watery; red corpuscles per cu.mm. 1,170,000; percentage white to red, 1 : 484; color by Gowers' hæmoglobmometer, about 15–18%; corpuscles extremely irregular in size and shape; considerable proportion of larger ones are oval. There are many microcytes. Several nucleated red blood corpuscles were seen.

She was ordered Fowler's solution, five minims t.i.d. for a week, and then to increase one drop each day until ten minims were reached; opium suppositories for the diarrhœa, and in a few days enemata of dried blood. Blood count on April 26th, 1,480,000; color percentage, 20. She took the arsenic well; began to improve in color, and on May 19th blood count by Dr. Henry was as follows: Red corp., 2,890,000; hæmoglobin, 40%.

Patient improved rapidly through the summer, the diarrhœa stopped and she gained greatly in weight. When I went on duty Sept. 3rd I did not recognize the patient, now a large robust-looking woman with excellent color. The apex systolic murmur persists.

We have in this case a history very similar to that which is met with in the majority of instances of post-partum anæmia. It is interesting to note that the patient, prior to delivery, had suffered with hemorrhoids, and had lost from this source considerable blood. She never regained her color after confinement, but remained very pale, and after discharge from the hospital she had many fainting spells. The condition in which I found her was extremely grave. She could not sit up in bed without fainting; and she had constant vomiting, with uncontrollable diarrhœa. I did not expect her to recover. The blood condition was typical as regards the appearance of the corpuscles. The percentage of coloring matter was, however, reduced proportionally to the corpuscles. Indeed, the individual value of the corpuscles in hæmoglobin was rather below par. In the majority of instances of pernicious anæmia the reverse holds good.

The case illustrates an important point in the treatment of profound anæmia. This patient had received twenty drops of the tincture of perchloride of iron three times a day, from Feb. 25th to Apr. 17th. Her diet had been carefully regulated, and every possible means employed to check the diarrhœa and vomiting.

Fowler's solution was begun with five minim doses three times a day, and for a time was well borne. The dose was gradually increased, and the improvement was rapid. On several occasions the sickness of the stomach was aggravated, and the medicine was interrupted for a week.

By the 19th of May she was able to sit up in bed, her appetite began to improve, the corpuscles had more than doubled in number per cubic millimetre,

the hæmoglobin had risen from 15 to 40%. Rectal injections of dried blood were, for a time, employed, but had to be stopped on account of the irritation they produced.

I did not see this patient from the end of May until I went on duty Sept. 3rd, at which time I did not recognize her. She had grown stout, her color was excellent, and she looked in robust health. The patient's recovery may be attributed to the arsenic, and I believe that if the iron had been continued she would have failed progressively, as she did during the six or seven weeks in which it had been administered.

This is by no means a unique history. To Bramwell, of Edinburgh, the profession is indebted for pointing out the almost specific action of this drug in certain cases of pernicious anæmia.

The statistics collected by Padley[1] a few years ago show forty-eight cases treated without arsenic, of which forty-two died. Of twenty-two cases treated with arsenic sixteen recovered, four died, and two improved.

Within the past few years, numerous observations have shown the powerful effect of arsenic in certain cases. Unfortunately, we do not yet fully understand why, in some instances, the drug should be well borne and prove successful, while in others the patient continues in the progressively downward course.

That the cases which we group as pernicious anæmia are very varied is now recognized by all writers on the subject. It is not to be expected that when the gastric tubules are atrophied arsenic can be curative. We need a careful study of those instances in which the drug has proved successful and of those in which it has failed.

To judge from therapeutic test alone there must be a very deep-seated difference between the two classes.

I know of nothing more remarkable in practical therapeutics, nothing so resembling specific action (unless we except iron in chlorosis and quinine in ague) than the rapid recovery of profound anæmia under this drug. As a rule it is well borne; and should be given, as Bramwell advises, in increasing doses, beginning with five minims, and rising gradually to twenty or thirty three times a day.

Puffiness of the eyelids, œdema above the eyebrows, vomiting or diarrhœa, indicate that the drug should be suspended for a time, or the dose reduced. It is interesting to note that the existence of vomiting or diarrhœa does not, however, contraindicate the employment of the medicine, as in the case here reported. These symptoms seemed to improve, for a time at least, when the arsenic was first given.

If the Fowler's solution disagrees, arsenious acid may be tried. I have known it to be well borne when the liquor arsenicalis disturbed the stomach. The drug may be given hypodermically, but in these instances of profound anæmia the tendency to hæmorrhage is so marked that the punctures may become hemorrhagic. I have known considerable subcutaneous extravasation follow an injection. The point of the greatest importance is the fact that the medicine must be given in increasing doses, and for prolonged periods.

[1] Lancet, 1883, II.

I find practitioners express great surprise when they hear of doses of Fowler's solution, of fifteen, twenty, and twenty-five drops three times a day. There is, I think, but one rule in the matter: give the drug cautiously until physiological effects are produced. The tolerance of the system for arsenic is well known. I have never seen serious consequences from its careful administration. Young persons, as a rule, take it better than adults. In an instance of pernicious anæmia which I reported a few years ago, the patient took twenty minims of Fowler's solution three times a day for weeks, with the most satisfactory results.

In post-partum cases recovery is always slow. It may be many months before perfect health is restored. It is well to intermit arsenic for a few weeks, but the drug should be given at intervals for many months, even when the health is apparently re-established, as there is a well-recognized tendency in these cases to relapse.

Clinical Memorandum.

A CASE OF PORRO'S OPERATION, PERFORMED ON ACCOUNT OF MULTIPLE MYOMATA, SAVING BOTH MOTHER AND CHILD.

BY S. J. MIXTER, M. D.

The patient, Mary M., aged thirty-eight years, entered the Carney Hospital on the evening of July 24, 1888. She gave the following account of herself: Family history good. Has always been well and strong. Menstruation began at eighteen years and has always been regular and painless, the flow lasting only three days. Has been married one year. For two years before marriage had some pain in the back and occasional abdominal swelling, for which she consulted a physician. Never noticed any hard mass in abdomen. She became pregnant some time after marriage, and has had no unusual symptoms until within the last few weeks, when the extreme abdominal distention gave rise to some pain and dyspnœa.

The day before her entrance she began to have occasional pain, and on the 24th the pains became severe enough to cause her to send for her physician, who, after an examination and consultation, sent her at once to the Carney Hospital, where she arrived in the evening, having travelled by rail about one hundred miles and walked from the station to the hospital, a distance of about a mile. Regular labor pains began while on the train. On entrance her temperature was 99°, pulse 96.

I first saw her on my morning visit, the following day, July 25th. She was a well developed and fairly well nourished Irish woman. Labor pains regular and frequent. Pulse quick but of good quality. Temperature normal. The abdomen was much distended and very irregular in outine. On palpation it was evident that there was something more than the ordinary pregnant uterus in the abdomen. Above the pubes could be felt a rounded mass the size of a fœtal head, and extending up from this to the margin of the ribs in the right hypochondriac region was a tumor, oval in outline, and evidently the uterus. Fœtal parts could be felt through the uterine wall, and the patient said

that all fœtal motion had been felt in this part of the abdomen. The fœtal heart could be heard on the right side, opposite the umbilicus.

In the left hypochondrium was another mass, hard, rounded, and smooth, separated from the uterus by a sulcus, quite marked in the abdominal wall and still more distinct on deep pressure. This mass extended up under the border of the ribs, and the percussion note was flat over the whole abdomen except in the sulcus above mentioned, where it was tympanitic. Two other hard nodules could be felt through the abdominal wall, one near the umbilicus about the size of a hen's egg.

Examination by the vagina showed a solid, immovable mass, filling nearly the whole pelvis. The finger could with difficulty be passed between this and the pubis, and a partially dilated os could be felt.

After consultation with Dr. M. F. Gavin, who kindly gave me the benefit of his advice and valuable assistance during the operation, an immediate laparotomy was decided on, as there seemed no reason to believe that the firmly impacted mass in the pelvis would move up to allow the passage of the child.

Everything was prepared to do the Sänger operation if it should seem possible after opening the abdomen.

An incision was made in the linea alba below the umbilicus, and the mass exposed. On introducing the hand into the abdominal cavity a firm, solid mass could be felt, springing from the fundus of the uterus and extending upward and to the left, and adherent to omentum and intestines. The incision was rapidly continued upward, and after the adhesions had been clamped and divided where necessary, the whole mass was turned out of the abdomen.

During these manipulations a rent was made in a venous bridge connecting the uterus and fibroid, which gave rise to a profuse hemorrhage, easily controlled, however, by pressure. The tumor filling the pelvis could now be seen, and was with great difficulty dragged upward sufficiently to allow the wire of the écraseur to be placed about the cervix, below it, but without constricting it at all. Both of the large tumors presented yellow areas on their surfaces. Two smaller tumors were situated on the front of the uterus. Hot towels were held over the abdominal wound by an assistant.

The anterior uterine wall appeared to be thin, and was not apparently the site of the placental insertion. An opening was therefore made at this point and rapidly enlarged with scissors, while the wire was at the same time tightened about the cervix. The child was easily delivered, the cord clamped with forceps and divided; the uterus, meanwhile, contracting rapidly as its contents were removed.

The hemorrhage from the uterine wound was comparatively slight in amount.

A sound was now introduced into the bladder, the wire tightened, and the uterus was amputated some distance above it. The broad ligaments were tied separately, and, after sponging out the abdominal cavity, and securing several bleeding points where adhesions had been torn, the abdominal wound was closed, using deep silver sutures, and superficial ones of silk, leaving the stump at the lower angle of the wound. One long pin was passed through it, and then the ovaries and superabundant uterine tissue removed with the Paquelin cautery. The stump and wound were sprinkled with iodoform and dressed in the usual manner. No attempt was made to stitch the peritoneal surfaces of the stump and abdominal wall together, as they were held firmly in apposition by the tension of the edges of the wound.

Meanwhile the child, which weighed nine and one-half pounds, was crying lustily in the next room.

Child born eight minutes after beginning of incision, and the total time of operation was fifty-seven minutes. Pulse at the end of the operation, 106. The patient made an uninterrupted recovery and suffered no more than most women after a normal delivery. The child was put to the breast as after a normal labor and there was a large quantity of milk.

I have reported this case at length, as the operation is an uncommon one in this country, and is destined everywhere to give place to the more conservative one of Sänger in the majority of cases.

The history of the operation is an interesting one, and especially so to Boston physicians, as the first operation on record for the removal of the uterus after Cæsarian section, was performed by Dr. H. R. Storer, in 1869. In his case the uterus was removed on account of uncontrollable hemorrhage following the usual operation, which was undertaken for obstruction caused by a uterine fibroid. Porro, in 1876, performed the operation, hoping to diminish the frightful mortality in Cæsarian section, death almost always following from escape of septic material from the uterine cavity into the abdomen. The result was a brilliant success, and in Europe especially the operation became at once popular. The tables of Harris published in April, 1885 (*Am. Jour. Med. Sci.*), show one hundred and sixty-four operations. Leaving out moribund cases, and fourteen cases where the stump was treated intraperitoneally (ten resulting fatally), will give a percentage of recovery of forty-four. Austrian operators have had the greatest success. In England there have been comparatively few operations, and Spencer Wells, in reporting an operation for obstruction by a uterine myoma, in June, 1887 (*Brit. Med. Jour.*), speaks of it as the third successful case, that is, saving both mother and child, in Great Britain.

In Harris's table quoted above, are recorded three operations in the United States, with one mother and two children saved.

In a letter from Dr. Harris kindly written in answer to my inquiries, he says: "The Porro operation in cases of fibroid tumors has rarely been performed in this country, as the ordinary or Sänger methods have usually been preferred. Porro amputation has been performed by Prof. H. R. Storer, Prof. D. Hayes Agnew, Dr. Oscar H. Allis, Philadelphia, and Dr. Bernays—all women lost, and all of the children but the last. As far as I know yours is the fifth American case. Thus far your operation appears to have been the only one to save both mother and child. The ordinary Cæsarian operation has

done better than this in our country, viz., fourteen operations: women saved, four; children saved, five. In only one were both saved, and I presume they are now living — boy nearly eight."

Gastro or laparo-elytrotomy, the statistics of which have been very good for an operation so seldom performed, would not have been suitable under the circumstances, as it seemed best to open the abdomen, and find out the true condition of things.

The success of the modified Cæsarian operation, now known as Sänger's, has greatly limited the field of Porro's operation. The results of the more conservative operation have been so brilliant that there is now no excuse for the removal of the uterus and ovaries, except in a few cases. It has been shown that a woman can have repeated operations performed without a fatal result; and when an operator (Leopold) can save thirteen cases out of fourteen by Sänger's method, Porro's operation on the one hand and craniotomy on the other are sure to become less often necessary. I had hoped to be able in this case to save the uterus, but I think that its removal was demanded by the large size and apparently necrotic condition of the myomata, and the hemorrhage from the ruptured vessels. The tumors were found on section to be already necrotic, and the deep sutures necessary to check the hemorrhage spoken of would undoubtedly have caused sloughing of the mass. In regard to the possibility of their removal apart from the uterus, I can only say that it might have been possible, but it would have added greatly to the risk of the operation.

In conclusion I wish to speak of the écraseur used in the operation.

It is one made for me by Codman and Shurtleff, to be used especially in the removal of large uterine tumors. The principle of the instrument is that of Billroth's, that is, it consists of a handle containing the screw, and a movable tip (*b*) with a secondary clamp. After tightening the wire as far as necessary, it is clamped on to the tip, and the handle and screw removed. The whole instrument is heavily made to give power. To prevent the wire from breaking where it passes into the tip, I had grooved wheels (*a*) put in, over which the wire runs. I had found by experiment that the wire always broke at this point, as the friction was so great. With this instrument the wire (which is best of annealed steel) can be quickly tightened to any degree thought best, and the tip and wire left in place, surrounded by the dressing. The handle is easily reapplied whenever it is necessary to tighten the wire. Extra tips of different sizes may be made.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M. D., SECRETARY.

Regular meeting, Oct. 22, 1888. The President, Dr. O. F. Wadsworth, in the chair. Dr. H. R. Stedman read a paper on

MEDICAL ADVICE REGARDING THE MARRIAGE OF SUBJECTS WITH A PERSONAL OR FAMILY HISTORY OF INSANITY.[1]

Dr. George F. Jelly said this question comes to me not infrequently for decision, and I find that my advice is frequently not followed. There are two standpoints from which the subject may be viewed.

First, the personal history of the applicant for advice. If the person has had several attacks of insanity I always advise against marriage. If there has been but one attack and a seemingly full recovery, with an interval of a number of years and a good family history, I advise marriage.

The second standpoint is that of heredity. If there is a taint on both sides, *i. e.*, of both of the contracting parties, I advise against marriage. If there is a taint on one side, and that be a strong taint, or if numerous members of the family have been affected, I advise against marriage.

I recall the case of a young lady who had suffered already from two attacks and was then having a third. The parents thought that marriage might bring her relief, and asked my advice. I advised against marriage. The lady has since had four or five other attacks.

As a rule the parties have already become attached, and although they seek advice they do not follow it.

Dr. S. G. Webber said: I can speak with much less positiveness than the gentlemen who have just spoken, as I have comparatively little to do with insanity. Dr. Stedman has mentioned the necessity of giving heed to the presence of other neuroses than insanity in the antecedents of those whose marriage is in contemplation. This deserves more consideration than it generally receives. The neurotic tendency is very strong in certain families: sick headaches, epilepsy, alcoholismus, and a general nervous weakness or neurasthenia, is found among the ancestors with only a very small proportion of insanity; or the person whose case is before the physician is the only one who has had insanity and yet he has come from such a family. In that case it is not desirable that he should marry.

I remember one or two cases in which I have been able to follow the subsequent history of the parties. A young lady, engaged to be married, had an attack of melancholia, not very severe, but requiring to be constantly watched. I treated her at home till she was nearly well, and then she went into the country to complete the cure. She recovered completely and remained well for more than ten years. I advised marriage. I believe her recovery was hastened by the knowledge that she could be married after she was well. Had the engagement been broken off she would probably have been much worse for a longer time, or

[1] Reserved for publication.

possibly have become incurable. She had two children; I saw her frequently, not professionally. About ten years after her marriage, as the result of some extra demand upon her strength, in consequence of sickness or other circumstances, she had a second attack of melancholia more severe than the first, and I felt it necessary to advise the sending her to an asylum. Being so situated that I could not give her the constant attention she needed, I did not follow the case and have not learned what was done nor how she got along.

In another case a lady had been insane in earlier life: she was at Somerville for some time; she recovered completely, so there was no trace of mental disturbance. She married, had no children; she was subsequently insane again, again recovered, and finally died of phthisis.

In both these cases I think marriage was proper. The patients were probably better for it. The only doubt would be as to the effect on the children in the first case; and it is too soon to know whether any ill will come to them. As the rest of the families were healthy, we may at least hope that the children will not inherit their mother's weakness. In the second case there were no children and the family was the better for the marriage.

There are four or five parties to consider in deciding this question of the marriage of the insane, — the man and woman themselves; the children, if there are any; the relatives; and the community at large. The first three are those most interested. In many cases there are no children.

Often it is difficult to decide what is the better course; and after giving advice one way, I have questioned whether it would not have been better to have given the opposite advice.

DR. S. J. MIXTER reported

A CASE OF PORRO'S OPERATION FOR OBSTRUCTION BY UTERINE FIBROIDS, SAVING BOTH MOTHER AND CHILD.[2]

DR. JOHN HOMANS said that the reader was much to be congratulated for the success of the case. He recalled to mind a patient, who came under his care just before confinement, with a fibroid completely filling the pelvis, so that the os uteri could be reached only with the greatest difficulty. All efforts to lift this tumor out of the pelvis were unavailing, although great force was used. He had expected to be obliged to operate on the patient, but two days later, after labor had been in progress for some time, the uterus lifted the mass out of the pelvis, and on examination the os was found presenting. The child was born, but was dead.

He considered the instrument which Dr. Mixter had shown a valuable one. He had experienced much trouble with breaking of wire, and he thought the wheels were of much value in taking off the strain.

DR. J. W. ELLIOT objected to the écraseur shown by Dr. Mixter, because of the difficulty in keeping it clean. He said there would be breakage of wire with this instrument as well as with others, as there had been in his own experience with the instrument. He considered Dr. Mixter's operation wonderfully successful. With such large fibroids as these, he thought that, if any operation was done, it should be the removal of the whole uterus. As to the relative value of Sänger's and Porro's operation in ordinary cases, there could be no question of the superiority of the former. The record of Leopold's fourteen cases, with but one death and all the children saved, would show this superiority.

There are, however, certain indications which call for the removal of the entire uterus: —

(1) A septic uterus, which if not removed would increase the danger of fatal termination.

(2) Those cases in which a condition exists which makes it important that the woman should never again become pregnant. Of course this can be accomplished by removal of the ovaries.

(3) In cases of large fibroids like the one under consideration.

DR. C. M. GREEN said that in such cases the question to be decided is whether the tumor will recede. Cases which seem very threatening often take care of themselves. Such a case he had seen.

He did not think that the presence of fibroids as a rule need interfere with the performance of the Sänger operation. He congratulated Dr. Mixter on being the first to perform a successful Porro's operation in New England.

DR. MIXTER said that he watched the case for some time, hoping to find that there was some movement in the pelvic mass, and finally decided that he should be obliged to proceed. In drawing the tumor out of the pelvis there was a rent made in the tissues about the uterus from which the hemorrhage was more abundant than from the uterine wound. This was another reason for removing the whole uterus.

DR. HOMANS said that these fibroids caused a good deal of trouble. They interfere with impregnation, they make trouble during the period of gestation, and cause difficult and dangerous labors. He should advise women with fibroids not to marry.

[2] See page 455 of this Journal.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON THEORY AND PRACTICE OF MEDICINE.

STATED meeting, October 16, 1888. DR. LANDON CARTER GRAY read a paper on

NEURASTHENIA; ITS DIFFERENTIATION AND TREATMENT.

He first directed attention to the fact that while functional nervous diseases are largely disregarded by the general practitioner because of the modern development of the study of them, yet the need of their proper classification was widely felt, particularly by neurological specialists. Dr. Gray did not believe that true neurasthenia was as prevalent as the followers of the late Dr. George M. Beard would have us believe. He stated that in his opinion there were three forms of neurasthenia,—the reflex, the lithæmic, and the simple. The reflex form was due to vicious habits and reflexes from nonnervous organs; the lithæmic was due to so-called lithæmia; and the simple form was that in which there was true nervous prostration. The points of differential diagnosis of these various forms were then dwelt upon.

But neurasthenia was also to be differentiated from a number of nervous diseases — especially the early stages of the latter — such as the morbid

fears (for which Dr. suggested the name of functional insanity), and which really belonged to the insane diseases; melancholia, especially the mild cases, in which suicide was often committed; the early stages of mild chronic forms of insanity; neurotic conditions in which the individual is subject to migraine, hysteria, angina pectoris, or anginoid attacks; the early stages of general paresis or locomotor ataxia; and a peculiar affection recently described by Hughes Bennett, and called by him muscular hypertonicity, in which the symptoms are those of weakness and exaggerated reflexes of the lower extremities.

The prognosis of these different forms was variable, depending upon the severity of the reflex cause when present, and the possibility of thorough treatment. The treatment of the reflex form was the removal of the cause, if possible. The lithæmic form was to be treated by moderate laxatives (the most satisfactory of which he had found to be the fluid extract of cascara sagrada), dilute nitromuriatic acid, and, if the nervous symptoms are severe, by rest. In any event, rest was a most important adjuvant, and should be proportioned to the needs of each particular case; it being better to have rather too much of it than too little. The diet should be regulated to a moderate degree by the entire withdrawal of either starchy or nitrogenous material for a short time, and then by cutting down the starchy material permanently by at least 50 per cent. In hot weather it was sometimes advisable to cut off the nitrogenous material for several weeks; and a complete change of air was often of the greatest benefit.

In the true cases of neurasthenia the best treatment was that advocated by Weir Mitchell, by rest, forced alimentation, massage, and faradism. Large doses of iron and malt extract should also be given with this treatment; the great difficulty with which was, however, that patients are apt to be disappointed at the loss of their muscular strength on first getting out of bed. Galvanism was an agent of great value in all these forms of neurasthenia, and it should be used as early as possible, except when the case was to be put to bed. It should be applied by means of large sponges, one at the nape of the neck and one on the dorsal spine, five to fifteen milliamperes being used, and the sitting continued for from three to five minutes every day. Massage was an uncertain remedy, often irritating to the patient, and was only to be used in connection with the rest treatment mentioned.

DISCUSSION.

Dr. W. R. Birdsall thought unquestionably that we must admit a neurasthenic element in disease; yet, at the same time, when we attempted to apply it to a group of symptoms we found that it often failed. In many individuals the nervous tendencies predominated as a result of heredity, and it seemed to him that the great danger was in assuming that we had a congenital neurasthenic condition, when the symptoms were in reality due to local causes or merely temporary conditions. The class of cases which Dr. Gray called the lithæmic would probably comprise the greater number of these, and it was important that they should not be treated on the basis of an unstable or defective hereditary nervous system. The same difficulty was found in dealing with the insanities. If we were to use the term neurasthenia at all, then he thought we should confine it to the class of individuals who suffer from hereditary defective nervous systems.

There was one point in which he said he did not quite agree with Dr. Gray. The latter had stated that in the class of reflex cases all that was necessary to do was to remove the cause. There was often, however, an acquired condition, the result of the reflex irritation, in which the whole nervous system was at fault. The removal of a local cause, whether about the eye, the nasal cavity, or elsewhere, was not always sufficient. In many cases we are still obliged to treat the individual for other neurasthenic symptoms cropping out in different forms.

In lithæmic cases the question of rest or of exertion for the patient was one which he thought must be specially determined in each individual case. In many instances increased activity, of a kind entirely different to what the patient had been accustomed, constituted the most satisfactory means of treatment. Of the modes of exercise that might be tried, mountain climbing was undoubtedly one of the best, as it secured an amount of oxygenation and tissue-change which could be hardly secured in any other way. The majority of their patients took very little exercise ordinarily, and it was important that the exertion made should not be too violent or prolonged. Another advantage of this moderate exercise was the mental occupation which it afforded. Very few of the cases were free from a hypochondriacal element, and the exercise of the muscles in tramping, rowing, etc., offered just that mild diversion which was needed; particularly if the patient were provided with the right sort of a companion, which was quite an important point. In conclusion, he said that if we used the term neurasthenia, he thought it should be with the proviso that it was understood to comprise a group of symptoms which might belong to various conditions.

Dr. Wm. H. Thomson said that the term neurasthenia was, no doubt, a very impressive word to use sometimes to patients, but otherwise he abominated it. He thought it should be placed on the same level as tonic, a word that led to more bad practice than any other in medicine, because remedies which acted in all sorts of different ways were all called tonics. When a patient came to him affected with nervous debility without appreciable organic disease, he said he always put to himself the question whether the individual was not suffering from one of four things, viz., virtual starvation; over-strain; some unnatural drain upon the system; self-poisoning. Those who were the subjects of virtual starvation (usually females), it would be found, ate no breakfast to speak of, and probably took for their other meals principally tea, bread, and sweets. They did not take sufficient food to maintain their respiration and circulation, and the rest cure was therefore the best for them. In the second class rest and food were also required, and often a change of surroundings. In the third class the drain, whatever it was, should be checked if it

could, and the patient would then get well. The fourth class, that of self-poisoning, was the commonest of all, and it was well illustrated by a case that had recently been under his care. A gentleman came to him suffering from cloudy mind in the day and insomnia at night, and he was cured with bismuth, columbo, and naphthalin. Another similar case was also successfully treated with intestinal antiseptics.

It was only very recently, Dr. Thomson said, that after paying special attention to various divisions of the organism in turn, we were coming back to that old part of the body that our forefathers used to regard as of so much importance, the bowels. At all times fermentations were going on in the intestines, and at the best moments of our lives putrid ptomaines were going into the kidneys, the liver, and other organs. The trouble with such patients as he was now speaking of was that they were suffering from prolonged self-poisoning, resulting from a deficiency of the natural antiseptics of the intestines, viz., the secretions. This was the lithæmic neurasthenia of Dr. Gray. The pulse was often full or of high tension, and the urine acid and of high specific gravity; while in the other three classes to which he had referred the pulse was very weak and compressible, and the urine usually of low specific gravity, and either alkaline or neutral in reaction.

As to the question of therapeutics, he had faith in only one real cure, and that was camping out in a tent in the woods.

DR. A. JACOBI said that of late it had been the tendency in medicine to get rid as far as possible of all names given to symptoms merely, and neurasthenia was of this class. We could speak of it properly as only a symptom, and it was a symptom common to so many conditions that the sooner it was gotten rid of the better. It was not simply weakness alone; we had been told that it was a chronic malnutrition of the nervous centres, due either to various adventitious causes or to a hereditary tendency. But congenital neurasthenia did not exist alone. With it was associated weakness of the circulation and the whole constitution. In any case of so-called neurasthenia, then, it should be our endeavor to make a diagnosis, if possible, of the original condition that gave rise to the symptoms met with.

DR. A. D. ROCKWELL said that although unprepared to discuss the question at length, he could not refrain from the statement that he believed in the existence of neurasthenia just as much as he did in that of malaria. The term was, with limitations, a valuable one, although he thought it had been very much abused. The most important point of differentiation was between primary nervous exhaustion and lithæmia. As to the manner of dealing with the lithæmic condition, the only way was for the subject of it to find out for himself what he could eat and drink and how he must work.

DR. S. BARUCH said that he was convinced that there was a complex of symptoms which was best designated by the term neurasthenia. In its treatment the principal indication was to promote tissue-change, and there was perhaps no better method of securing this than hydro-therapy. Many of his patients suffering from this trouble he directed to take a cold plunge bath every morning; care being taken to secure prompt reaction. He still believed in the term tonic also, and he thought the cold plunge one of the most valuable tonics that we had.

DR. E. D. FISHER thought the word neurasthenia would be a very convenient one to retain until our knowledge of nervous diseases had become more complete than it was at present. The principal objection to its use was the danger of mistaking for the condition it implied some of the grave organic diseases, especially in the incipient stage. It was, therefore, necessary to be on our guard in this respect. As regards the treatment of neurasthenia, since it represented merely functional disturbances, so far as we knew, uniformity was impossible, and each case must be handled according to its individual circumstances.

In closing the discussion, Dr. Gray said that one of his objects in writing the paper was to elicit such an expression of opinion from various observers as had now been given. On the whole, it seemed to him that there was a very immaterial difference between his own standpoint and that of some of the speakers who objected to the use of the term neurasthenia. There were certainly many symptoms not of organic origin which one could not classify without resorting to some such expression. It was, therefore, of practical service to retain it, and the subdivision into the three classes which he had indicated seemed to him a convenient one. In the future such advances would no doubt be made that many points which are now obscure will be cleared up, and many of our present views would accordingly be modified.

Prof. Beclard (drawing cigar from pocket): "Does tobacco make you sick, young man?"

Fellow-traveller (with manifest disgust): "Yes, sir; it nauseates and gives me a frightful headache."

Prof. Beclard (lighting cigar): "My advice, then, is for you never to smoke."

— An English contemporary, commenting on the efforts of cremation societies, and the vigorous attempts which are made to popularise this method of the disposal of the dead, says that cremation evidently makes very little progress. According to an official statement only fifty furnaces, the purpose of which is to reduce human bodies to ashes, are to be found outside Asia. Of these, twenty are in Italy, one in Germany, one in England, one in Switzerland, one in France, and the rest in the United States. This record, it must be conceded, can scarcely be interpreted into any sign of encouragementby those who devote much of their time to advocating the claims of cremation over other methods of disposal of the dead. According to the *Flamme*, which is the official organ of the Berlin Cremation Society, the total number of bodies cremated in the various countries to the 1st August is as follows: — Italy, 998; Gotha, 554; America, 287; Sweden, 39; England, 16; France, 7; Denmark, 1. The members of cremation societies number 3012 in Sweden; 1326 in Denmark; 1326 in Holland; 612 in Germany; 580 in Italy; Hamburg, 438 and Switzerland (Zurich), 390. There is a curious disparity between the number of members in Italy and the proportion cremated.

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THE TREATMENT OF VALVULAR DISEASES OF THE HEART.

UNDER this head, Dr. J. M. Da Costa contributes an article to the *American Journal of Medical Science*, for November. He emphasizes the view, in opposition to still widely prevalent teaching, that the precise valve affected is not, with our present resources, the key-note to the treatment of valvular diseases. Much more important is it to regard the state of the muscular fibre; the size of the cavities; the condition of the arteries, veins, and capillary system; the secondary results of the cardiac lesion; the control of the nervous system. The first two of these considerations are the most important. The treatment of a valvular disease that is "compensated"— where the increase in size of the heart muscle is just enough to overcome the valvular imperfection — in which there is no dropsy or respiratory disturbance, and exercise does not produce inordinate distress, is widely different from that of commencing failure of the heart muscle with circulatory embarrassment. In the former case we are to endeavor to keep the heart muscle and cavities in a healthy condition by simply regulating the patient's life and habits; in the second case the stretching, faltering heart calls for support, and is rallied, made regular, and kept for a long time performing its functions admirably, by the persistent employment of moderate doses of digitalis. Dr. Da Costa emphasizes the fact that the same valvular disease will, at different times, according to the varying state of heart muscle and cavity, require very varying treatment. Cases have come under his observation in which the active state of the circulation, the marked hypertrophy, the cardiac uneasiness, were always greatly relieved by aconite and aggravated by digitalis, which produced a sense of cerebral uneasiness and weight; such cases, however, when the heart began to weaken, were for a series of years markedly benefited by digitalis.

Patients of the class above alluded to, with slowly deteriorating compensation, are usually those in whom small doses of digitalis act most favorably. The quantity need rarely be more than ten drops of the tincture twice daily, to be kept up till the effect on the heart and pulse is perceptible, and then suspended, to be resumed according to circumstances.

There is another cardiac condition encountered in valvular diseases in which digitalis is the principal remedy, and in still larger doses. "It is when the compensatory hypertrophy is gradually lessening in proportion to the valvular defect, where the nervous system is becoming gorged, the breathing much oppressed; the internal organs congested; where the feet are beginning to swell, the pulse is rapid and compressible, the heart often fitfully excited; it is when the symptoms become rather suddenly aggravated, and a sense of weight and distress in the cardiac region suggests that the organ does not fully empty itself, that larger doses of digitalis will show a wonderful influence." Here the writer would give as much as fifteen minims of the tincture every second or third hour. But while this remedy is given in these large doses, the patient must be kept at rest. The mischief once checked, smaller doses will again show their good effects. This condition is most often met with in mitral complaints, and in advanced stages of aortic regurgitation.

In the remarks above made it is assumed that the muscular fibre of the heart is not in a state of degeneration. When, however, a granular, fatty, waxy, or fibroid change takes place, the treatment is still the same, though there should be a freer exhibition of tonics and stimulants. We do not now get the same results from digitalis or kindred agents, and arsenic or strychnia is always worthy of a trial. These are difficult cases to treat, and difficult cases to recognize. The age, the history which shows a likelihood of fatty or other degeneration, the aspect of the patient, and the very fact that the heart muscle does not seem to respond to cardiac tonics give a clue to the true character of the affection.

Prof. Da Costa speaks of another class of cases in which excessive growth of the heart muscle and strong action call for aconite and veratrum. This state is oftenest met with in aortic regurgitation. "The impulse is extended, forcible, and forcible out of proportion to the cardiac percussion dulness; there is often throbbing of the vessels of the neck, dull headache, tension in the pulse, and a feeling of constriction in the chest. Aconite is pre-eminently the remedy; it diminishes the blood pressure

in the arterial system and gives great relief." Two-drop doses of the tincture are given every fourth or sixth hour for the first few days, then only twice a day. Da Costa speaks highly of a combination of one-drop doses of aconite tincture, with three of tincture of veratum viride, and seven of tincture of ginger; this, he says, is an admirable sedative, and does not sicken.

The writer next alludes to cases, especially of mitral narrowing, in which the extreme irregularity presents a striking feature. These are mostly cases with imperfect or weakening compensation, and therefore to be benefited by digitalis and remedies of that class. As an adjunct to this treatment, belladonna may be used, and pushed to its constitutional effect.

The condition of the arteries, veins, and capillaries often calls for treatment. The turgescence of the veins in instances of dilated right heart and dropsy is always remarked. But there is the equally important state of the arteries, arterioles and capillaries, and the appearance of the skin and network of fine vessels in it, by which we can judge of the more minute circulation. This condition of the vascular system demands treatment equally with that of the heart, but digitalis contracts the arteries and arterioles, and the indications are to get with increased cardiac power a freer flow in the vessels without resistance from them. No remedy, says Da Costa does this. It is claimed that strophanthus has this property; but this is not proved, and recent researches really suggest the contrary. Nitro-glycerine and the nitrites produce rapid and great dilatation of the vessels but have little or no effect on the muscular fibres of the heart. Belladonna has the same effect as nitro-glycerine, less on the vessels, rather more on the heart. He suggests a combination of nitro-glycerine or atropia with digitalis in the right proportions, to meet the special indication, and thinks that here is a rich field for future research.

With reference to atheromatous disease, as well as to rheumatism as a causal agent of valvular disease, we have no remedies enabling us specially to meet the causal indications. We possess, says Da Costa, no remedies to influence the results of rheumatic endocarditis, when the acute stage is fairly over, nor have we any "solvents" or the means to influence degenerative states.

Some judicious directions are presented as to food, which should be "nutritious, easily assimilated, but never taken in large quantities at a time." "There is no objection to the use of tea and coffee if not excessive, and small quantities of alcoholic drinks are rather beneficial than otherwise in inadequate or faltering compensation. Except for gouty persons, we may hold to this axiom, that it is right to allow alcohol in cases in which we think digitalis applicable."

Regulated muscular exercise, especially on foot, is of use, as it sustains the nutrition of the heart muscle. It must be kept within the limits of not producing shortness of breath, and ought not to be undertaken in the face of a strong wind. Having had some experience with the difficulty people with valvular heart affections have in living in mountainous regions, as in Colorado, Dr. Da Costa is not favorably inclined toward Oertel's hill-climbing and mountain-climbing plans of treatment. Keeping the nervous system as quiet as possible, and being cheerful, are great aids in holding the cardiac malady at bay. Absence of worry means generally long life; worry, short life.

In the treatment of the secondary results of cardiac affections, Da Costa recommends ammonia, brandy, small doses of digitalis with bromide, a course of cannabis indica, etc., for palpitations; the iodides, with aconite plasters, where a constant sense of uneasiness or actual pain "is the striking symptom, and especially nitro-glycerine," which so lessens blood pressure, and diminishes the resistance the heart has to overcome; caffeine, "than which there is no better diuretic in cardiac cases," for renal insufficiency and scanty diuresis; purgatives and small doses of nux vomica for dyspeptic symptoms, due to catarrhal condition of the stomach and bowels, so common in valvular diseases. Purgatives, he says, are not given as often as they ought to be in valvular disease of the heart. They not only remedy the stagnation in the portal circle and remove the catarrhal condition, but they lessen the liability to dropsy.

Among the substitutes for digitalis, Dr. Da Costa regards caffeine, strophanthus, and adonidine as the best. From adonidine in one-tenth to one-fifth of a grain doses, three times a day, he has witnessed some admirable results, but more in cases of functional than of valvular disease of the heart. Strophanthus he has seen to favorably influence irregularity and dyspnœa, but as a diuretic it is inferior both to digitalis and caffeine. From convallaria he has had, in common with others, disappointment in valvular affections, though he has found it of value in functional disorder. Cocaine has proved to be a cardiac stimulant and tonic not devoid of diuretic powers. Chloride of barium in one tenth of grain doses in pill form has shown itself to be "a general tonic and a cardiac tonic, a remedy that increases the tone in the blood vessels, and a fairly good diuretic." Among its properties, it has been found to lessen cardiac pain.

THE CASE OF THE LATE EMPEROR FREDERICK OF GERMANY.

WE had hoped to be spared the necessity of editorial comment upon this unfortunate and unedifying subject, but with the receipt of the official reports and manifestoes giving all the light which is likely to be thrown upon it, and an insight into some issues which we would gladly not have had, some reference to them is unavoidable.

The perusal of the published documents[1] of the German and English physicians concerning the fatal illness of the late Emperor, now before the public, has been a source of sorrow to every one who has the least regard for the good faith and the good name of the medical profession.

One encounters in these volumes such storms of ill temper and bad breeding that one is tempted at the very outset to discredit all the statements of all the combatants. Anger and accuracy are incompatible. We shall, therefore, leave the loathsome and inhuman personal thrusts and stabs, which are scattered through these pages, in silence, and from the mass of words and vituperation endeavor to gather a few grains of scientific truth.

The history of the Emperor's malady is complete. That he died of cancer of the larynx there is no doubt; there is also no doubt that it was so diagnosticated by his German physicians at a time when it was all-important to recognize it, namely, in its earliest stage. For it is at this stage that we must act promptly and vigorously if we are to do anything of a surgical nature with a view to the preservation of life. Granting that the account of the appearances in the larynx at this stage (May, 1887), as given by that able clinician and laryngoscopist, Prof. Gerhardt, be correct, it is inconceivable how any one familiar with the manifestations of disease in the larynx should not have confirmed his diagnosis of malignancy. Sir Morell Mackenzie, however, of London, an acknowledged authority on diseases of the larynx, examined the patient at that time, and strongly doubted the malignant nature of the disease. If we turn now to Mackenzie's account of the Emperor's illness, and look at the sketch of the growth (p. 13) when first seen by him, we should say that he was quite right in not agreeing with the diagnosis of cancer. And if we turn over a few more pages and inspect the sketch on p. 47, which shows the appearance of the larynx after complete removal of the growth, we are free to confess that it is as healthy a looking glottis on *paper* as we have ever seen. Here, then, we meet with our first dilemma. We leave Prof. Gerhardt's description feeling convinced that the disease can be no other than cancer, and turn to Sir Morell's well-executed diagrams and feel equally convinced that cancer did not exist, and no longer wonder that Prof. Virchow failed to find evidence of malignancy or that he did find a *pachydermia verrucosa* or any other unheard-of complaint. The autopsy, however, showed that the disease was cancer. We feel that the microscope played rather an unfortunate rôle in the early history of the Emperor's malady. The course of a disease and its clinical aspects are the important features in a case of this nature. It is what *we* see, not what the microscope sees, that should influence our judgment and determine our actions. It is a possible thing, and in certain instances by no means a difficult thing, to recognize cancer of the larynx when it is limited to a very small area of the organ. We are of the opinion that the case of the late Emperor was just one of these instances. The Germans knew perfectly well what disease they had before them. The English apparently did not. In this case, at least, the general practitioner proved himself more expert and a better observer than the specialist.

The practical question now is, What is the proper treatment for cancer of the larynx when it is limited to a small portion of the larynx — the condition, in fact, of the Crown Prince in May, 1887? We all know what happened in his case, and what inevitably will happen in all similar cases when the disease is allowed to run its course.

Would the result have been different had the advice of the Germans regarding treatment been adopted? They showed their wisdom in recognizing the true nature of the disease. Was their suggestion to split the thyroid cartilage, whereby easy access could be had to the seat of the trouble, and to thoroughly scrape away the diseased tissues, equally wise? This question can be answered in twenty, or perhaps in ten, years from now more accurately than it can be at present. We incline to the belief, however, that this counsel given by the Germans indicated, under the circumstances, the scientific and proper course to have pursued; and for these reasons: The Crown Prince was apparently in superb physical condition; thyrotomy is not a grave operation in itself; all the advantages of antiseptic surgery were at hand, and the operation would have been performed by a skilful and able surgeon; other men have been cured, why not this one in

[1] Die Krankheit Kaiser Friedrich des Dritten, dargestellt nach amtlichen Quellen und den im Königlichen Hausministerium niedergelegten Berichten der Aerzte Prof. Bardeleben, Generalarzt I. Kl. und Kgl. Geh. Ober-Med. Rath in Berlin; Prof. von Bergmann, Generalarzt I. Kl. und Geh. Med. Rath in Berlin; Dr. Braumann, erster Assistent der Kgl. Chirurg. Klinik in Berlin; Prof. Gerhardt, Geh. Med. Rath in Berlin; Prof. Kussmaul, Geheimer Rath in Strasburg i. E.; Dr. Landgraf, Stabsarzt in Berlin; Dr. Moritz Schmidt, Sanitätsrath in Frankfurt-a.-M.; Prof. Schrötter, Vorstand der Laryngol. Klinik in Wien; Prof. Tobold, Geh. Sanitätsrath in Berlin; Prof. Waldeyer, Geh. Med. Rath in Berlin. 8vo, pp. 103. Kaiserlich Reichsdruckerei, Berlin. 1888.

"The Fatal Illness of Frederick the Noble." By Sir Morell Mackenzie. London: Sampson, Low and Co. 1888.

the prime and vigor of life? The advisers of the Crown Prince were justified, we think, in running the slight risk of a thyrotomy to rescue such a great life. The result, at all events, could not have been worse than that of the palliative course pursued, and there is a possibility that the life of the best and noblest Hohenzollern that has ever lived might have been saved.

We are glad here to record the one point upon which all the medical advisers of the late Emperor agree. They all bear testimony to his noble character, fortitude, and the uncomplaining and patient manner with which he submitted to his fate. This is the one soothing feature of these volumes. Considering the length of time the physicians were in contact with this gentle and good man, it is to be regretted that they did not absorb at least a little of his virtue.

TREATMENT OF INCONTINENCE OF URINE BY RHUS AROMATICA.

RHUS AROMATICA has recently come into vogue in France as a remedy for incontinence of urine in atonic states of the bladder. According to *La Thérapeutique Contemporaine*, Drs. Max, Burvenich, Numa, and Hamon have all tried it in this disorder, and have obtained signal successes where all other remedies have failed.

Max prepares a tincture by macerating two hundred grammes of the bark in a thousand grammes of alcohol at 80°. The dose is from ten to fifteen drops three times a day. Max claims nine cures out of eleven cases. Burvenich obtained a cure in eleven out of thirty-three cases; ten of the remaining twenty-two were considerably benefited. The good effect of the medicine is not felt till the fifth or sixth day; sometimes satisfactory results are not perceived till at the end of three or four weeks.

According to Burvenich, *Rhus aromatica* constitutes a powerful tonic similar to nux vomica, for in a man aged seventy-nine years, affected with incomplete paralysis of the bladder without stricture of the urethra or hypertrophy of the prostate, *rhus aromatica*, in the dose of thirty drops a day, greatly facilitated micturition by giving tone to the bladder. Numa also asserts that it excites the unstriped muscle of the bladder as well as of the uterus and the rectum. He gives the tincture to children from two to six years of age in the dose of ten drops twice a day, and to older children in the dose of fifteen drops night and morning. The tonic effects do not last, for the paresis of the sphincter vesicæ muscle returns when the medicine is discontinued.

Hamon has also testified to the efficacy of *Rhus toxicodendron* in certain cases of incontinence of urine, with atony, in young persons. He gives twenty drops at bedtime in a little simple elixir, or other convenient menstruum. This use of *Rhus toxicodendron* is not new.

The *Rhus aromatica* is the *fragrant sumach*, which is indigenous in this country, growing in dry rocky soil from Vermont to Michigan, Kentucky, and westward. It is a low straggling bush with sweet-scented leaves. The *Rhus toxicodendron* is the well-known *poison ivy*.

MEDICAL NOTES.

The Medical Press reports the case of a young woman, of a highly nervous temperament, who had not menstruated for ten years, since the sudden arrest of the flow consequent on a fright. This suppression reacted on her, and made her a confirmed invalid. She had kept her bed for several years. The patient was anæsthetized, and Dr. Chiarleoni made an incision in the median line extending through the epidermis only. This was sutured and covered with an antiseptic dressing. The result of the operation was surprising. On the third, fourth, and fifth days after the operation there was a copious discharge of blood from the uterus, with lumbar and pelvic pain. The ultimate effect was a marked amelioration of the patient's general condition, and she was soon able to get up and take exercise.

— Cooking delicacies for the sick is a comparatively new but very popular industry, added to the list of peculiar employments by which women are enabled to earn their living in New York, according to the *New York Sun*. One of the consignors of the Woman's Exchange has entire charge of this special branch of cuisine, and has coined dollars for herself, besides carrying comfort to many sufferers. At the suggestion of friends she began the cooking of delicacies in which long practice had made her an adept. Now the invalids in the richest houses on the avenue, the boarders at the Hoffman House, and the delicate friends of wealthy patrons among the poor, alike enjoy the same broths and teas, iceland moss, and blanc mange she prepares, and which can be found nowhere else so delicious in taste. Beef tea, chicken and mutton broth, and beef juice, with various similar delicacies, may be had at any time on a day's notice at the Exchange, and in cases of emergency they are often prepared by the lady during the night. The most accomplished and high-priced cooks almost invariably fail in cooking for invalids, and boarders at even the best hotels and boarding-houses cannot be supplied with the appetizing and nourishing food essential to invalidism.

Many physicians in the city, understanding the importance of suitable diet for their patients, rec-

ommend to them the food prepared by these women who are by long practice proficient in the art of serving. Another woman makes her living preparing calf's-foot jelly for the sick. This requires a longer notice than the broths, as she sometimes experiences some difficulty in obtaining the calves' feet in the up-town markets, which necessitates a half day's journey among the down-town shops.

Still another gentlewoman prepares various kinds of breads, — brown bread, graham, and health food bread. A wealthy lady in town has kept an old coachman alive on the beef tea made by the gentle spinster at the Woman's Exchange all through the past summer, and another ordered rolls and chicken broth sent to a sick servant for many weeks, until her recovery was announced. A lady in Washington, learning of the illness of a poor friend, ordered nourishing dainties sent to her through a long illness.

Miscellany.

A SIMPLE WATER-FILTER.

Dr. Castle says (*New York Medical Journal*) that for a long time he has used a simple contrivance for filtering water, which has been serviceable and at the same time inexpensive. He took an ordinary percolator and packed the outlet with absorbent cotton so tightly that the water could only flow in drops. By means of a piece of copper wire for a bale, it was suspended from a hook over the sink. As often as necessary, water is poured into the percolator, and a receiving vessel is placed under the outlet. Whenever the cotton shows much discoloration (a thing which is easily observed, owing to the percolator being of glass), it is replaced with a fresh portion. The filtering medium being always under observation, there is little risk of contamination of the water by accumulation of filth.

TOBACCO AND BACTERIA.

The *Lancet* remarks that the popular belief in the germicidal virtues of tobacco-smoke (which has been revived in connection with the alleged immunity enjoyed by the cigar-makers of Florida during the recent yellow-fever epidemic) has received some confirmation in the scientific researches of Dr. Vincenzo Tassinari, first assistant of the Hygienic Institute of Pisa University. In a preliminary note on his experiments (*Centralbl. f. Bakteriologie*, Bd. iv. No. 15) he describes the simple apparatus he designed to test the effect on pathogenic organisms of exposure to the fumes of tobacco. The apparatus consists of a chamber formed by two glass funnels placed horizontally, and connected together at their mouths by paraffin. In this chamber is suspended from a loop of platinum a small piece of linen, with the threads of its lower extremity immersed in a culture fluid containing the microbes. The chamber is connected at one end by a tube with a cigar or cigarette, and at the other, by a tube containing a plug of cotton wool (to serve as a filter), with the mouth of the experimenter. The smoke as it is exhaled, therefore, thoroughly surrounds the linen soaked in the culture fluid, and after the experiment, which lasts from thirty to thirty-five minutes, involving the consumption of from three and a half to four and a half grammes of tobacco, the chamber is opened and the linen allowed to fall into a test tube containing fluid gelatine. Control experiments were also, of course, made. The micro-organisms subjected to this treatment included — 1, Spirillum choleræ asiaticæ; 2, Spirillum Finkler-Prior; 3, Bacillus anthracis; 4. Bacillus typho-abdominalis; 5, Bacillus pneumoniæ (Friedländer); 6, Staphylococcus pyogenes aureus; 7, Bacillus prodigiosus. The result varied with the variety of tobacco and the kind of microbe, but in every instance there was marked (sometimes very great) delay in the development of colonies in the gelatine as compared with that of organisms dealt with similarly, but without exposure to tobacco-smoke. Indeed, the development of some was entirely prevented. For example, in the third series of experiments cited, where large Virginia cigars were used, the development of Bacillus prodigiosus was delayed for seventy-two hours, that of Staphylococcus pyogenes aureus for seventy-three hours, of Bacillus anthracis for ninety-seven hours; whilst of the others mentioned above no development of colonies took place after from a hundred and twenty-eight to a hundred and sixty-eight hours. Dr. Tassinari attributes these results to the chemical action of the ingredients of tobacco-smoke. He proposes to extend his researches more fully, both as regards the effect of different kinds of tobacco upon these and other micro-organisms, especially the tubercle bacillus, and to determine the time of exposure as well as the amount of tobacco necessary to produce the full effect. He hopes also to ascertain what substance or substances are responsible for the germicidal action.

THE FORTHCOMING REPORT ON MARRIAGE AND DIVORCE IN THE UNITED STATES.

The thoroughness with which statistics are collected under the direction of Col. Carroll D. Wright by the Labor Bureau at Washington is well illustrated, says *Science*, in the gathering of the facts in regard to marriage and divorce in the United States, that are to be embodied in a special report that will be ready early in January. The special agents engaged in this work have obtained the figures from every court in the country having divorce jurisdiction. When it is stated that there are more than twenty-seven hundred of these courts, and that the period of investigation extends over the ten years from 1876 to 1886, the magnitude of the work may be imagined. The report in each case will give the ages of the persons divorced, the cause for which the separation was granted, state whether the husband or wife obtained the decree, the number of children, the place of marriage, and the migration of the couple since then. This latter inquiry is made in order to show whether the change of residence was *bona fide*, or merely for the purpose of obtaining a divorce. Statistics showing the length of time the marriage lasted, and other facts that may tend to throw light on the subject, have also been collected. The number of marriages will be given by counties for the same period, so that

the ratio of divorces to marriages may be seen. There will be added a synopsis of the divorce laws of every State, and the statistics of divorces in the principal countries of Europe. No such investigation for original information has ever been made in any country, and there is none in which it could be made. If it were possible for such a force of experts to be organized elsewhere, as Colonel Wright commands the services of, to make the inquiries, prejudice, red tape, and respect for established institutions would prevent them from obtaining the information they sought. Americans have reason to feel proud when they remember that nowhere upon the globe is there an organization, public or private, so well equipped for the collection of social statistics as the United States Labor Bureau.

Correspondence.

ANTIPYRINE AS AN ANALGESIC.

MR. EDITOR,—In the excellent "Report on Progress in Therapeutics," by Drs. Williams and Delano, published in your Journal of Oct. 11th and 18th, no mention is made of the use of antipyrine in congestive dysmenorrhœa. In my experience (*Medical Record*, Oct. 20th) this drug is most efficient in migraine, and following this in the pains of dysmenorrhœa.

It is also stated that "in relieving pain it does not produce sleep, but, for the relief of pain and to produce sleep as well, antipyrine and chloral make a good combination." This is contrary to my experience, in which it produced sleep inside of one hour in all but two cases; even these felt drowsy and wished to lie down.

Two cases coming under my care since the notes were forwarded to the *Record* will illustrate these points.

Case I. Dysmenorrhœa of several years standing. The patient experiences severe uterine pains, which are followed by violent pains in the region of the occiput. These give rise to delirium, which usually lasts for twelve and sometimes for twenty-four hours. When called to see the case I was informed that nothing gave relief; that morphia was generally used hypodermically, but only produced a condition of muttering delirium and never gave rise to quiet sleep.

As the patient had never taken antipyrine, I gave ten grains, which in one-half hour lessened the pain and caused a slight doze, from which the least noise awoke the sufferer with a start. At the end of that time the medicine was again repeated. Inside another half-hour the patient had fallen into a quiet sleep, from which she awoke to find her pains departed. No medicine had ever produced so happy a result before.

Case II. Boy of about eleven years ate some uncooked peas. In a short time his stomach became distended so as to be visible through the integument, and when percussed sounded like a drum. Periodic pains had come on, during which he cried out so as to be heard for one hundred yards. One ten-grain dose of antipyrine was given. Inside one half-hour he had ceased to cry out, and passed into a short sleep, from which he awoke completely relieved.

I am, Sir, yours very truly,

P. R. EGAN,
Asst. Surgn. U. S. Army.

PARIS LETTER.

(*From our Special Correspondent.*)

PARIS, 26th October, 1888.

MR. EDITOR,—Potassophobia is a term that may be applied to the fear entertained against the salts of potash, as they are considered toxic. It is for this reason that the iodide of sodium is frequently substituted for the iodide of potassium. But this fear, according to Professor Germain Sée, in a recent communication to the Academy of Medicine, is utterly without foundation. The salts of potash, he says, are toxic when injected directly into the circulatory system; they then have an undeniable action on the heart; but taken by the stomach they have no injurious effect. He points out that the debilitating effects of potassium salts on muscular structures are also found, though in a slightly smaller degree, in sodium salts. Bunge has calculated that one hundred grammes of potatoes contained six grammes and twenty centigrammes of potash. An Irishman consumes per day from twelve hundred to thirteen hundred grammes of potatoes. He absorbs in consequence from seventy-two to eighty grammes of potash, comparing which with the amount of potash contained in the two or three grammes of the iodide of potassium daily prescribed to patients, that contained in the latter is insignificant. In the treatment of affections of the heart and of the lungs, M. Sée prefers the iodide of potassium to the iodide of sodium, acting as it does, as pointed out by Traube, in a most distinct manner on the muscular system and on the nerves of the heart.

Dr. Dujardin-Beaumetz regards phenacetine as superior to antipyrine for the following reasons: it is more active, there is absence of toxicity and of accessory unpleasant phenomena, its insipidity is perfect, its analgesic and antithermic properties are equal and perhaps superior to those of antipyrine. Like the latter, however, phenacetine does not act on the duration nor on the course of a malady.

At a recent meeting of the Academy of Medicine, Dr. Perrin read a report on a note by Prof. Chauvel, of Val-de-Grâce, on two cases of tardy extraction of projectiles lost in the bones of the face, which had been considerably injured. In both the cases the bullets were allowed to remain in the deeper parts of the face for three and four years respectively; the consequence was that the bullets could not be reached when the surgeon searched for them in order to extract them, as their presence had caused considerable damage. From these two cases Dr. Chauvel has arrived at the practical conclusion that it is advisable to make a search for foreign bodies or projectiles, whatever they may be, immediately after the wound when it is possible, and when this search is not exposed to any serious danger. There is an exception to this rule only for penetrating wounds of the skull, of the chest, or of the abdomen.

Dr. A. Ollivier read a note on the contagiousness of the vulvo-vaginitis of young girls. This form of the etiology of the disease has been scarcely noticed by authors, although Dr. Suchard, of Lavey, has lately drawn attention to it, and he indicated that the bath in common was one of the modes of this contagion. Dr. Ollivier relates cases of contagion having been propagated from one child to another. Two little girls having been treated for a vulvo-vaginal discharge at the hospital for children, fifteen other cases in the same ward soon followed. Dr. Ollivier, considering this affection as being contagious, took precautionary measures for the protection of the healthy subjects, and the epidemic was completely arrested. It was possible, said Dr. Ollivier, that the contagion was effected by the hands of the *infirmières* (sick nurses), by the sponges, by the vases, and the seat of the privies. This was probable, because there were no cases of vulvo-vaginitis in the ward before the admission of the two little girls referred to, and there were none after the prophylactic measures had been carried out. As regards the nature of the contagium, Dr. Ollivier is engaged in experimental researches, and will in due time communicate the result to the Academy.

Dr. Lutaud, in a note in the *Revue Obstétricale* on the treatment of the retention of the urine in lying-in

women, writes that all practitioners have observed the frequency of this complication, which, however, does not present any gravity, as it is sufficient to practise catheterism for a few days to remedy it. But the use of the catheter is far from being inoffensive. It might, in spite of all the antiseptic precautions, produce infection of the bladder. It is admitted by many that the catarrh of the bladder and the cystitis which is so often observed after parturition are the consequence of catheterism. Schultze and Freund have lately drawn attention to this subject. They think that the retention of urine is not due to parturition, but simply to the fact that the parturient patient had not learned to pass her water in the dorsal decubitus. According to these authors, the woman ought to acquire the habit of urinating in the position of dorsal decubitus for some weeks or even the few days which precede parturition. Retention of urine will thus be avoided in parturient females. Dr. Lutaud states that since he became acquainted with the above observation, he caused his parturient patients to urinate in the dorsal position, and he has never since observed a single case of retention of urine in such patients.

In the *Petit Journal de la Santé*, Dr. Sully gives the following advice to suckling women: Abundance of substantial food, which should be easily digested. This food should contain a considerable quantity of albumen, also of salts of lime, of soda, and of potash. On this account, lentils deserve the preference. After ha ing tried alcohol in all its forms, the author concluded that every variety of alcoholic drink is injurious as much to the mother as to the child. It is true that the absorption of a glass of beer or porter increases the afflux of milk to the breasts, but this milk is watery, poor in nutritive principles, and not at all comparable to that which is produced by the digestion of substantial nourishment.

REPORTED MORTALITY FOR THE WEEK ENDING OCTOBER 27, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	673	241	16.05	16.80	1.95	2.70	4.80
Philadelphia	1,016,758	337	88	13.63	15.95	1.16	3.48	6.38
Brooklyn	751,432	296	101	23.12	12.92	2.72	4.08	10.54
Chicago	760,000	277	102	21.96	9.36	1.80	5.04	11.16
St. Louis	449,160	150	55	22.44	6.60	2.64	1.98	9.24
Baltimore	437,155	157	58	13.44	14.72	2.56	4.48	1.28
Boston	407,024	195	59	14.79	14.28	1.53	4.08	7.14
Cincinnati	325,000	98	—	15.30	7.14	3.06	3.06	9.18
New Orleans	248,000	—	—	—	—	—	—	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	92	30	22.89	11.99	1.09	11.99	3.27
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	27	15	37.03	11.10	14.80	3.70	3.70
Charleston	60,145	35	15	17.16	5.72	8.58	2.86	2.86
Portland	40,000	13	4	23.07	23.07	7.69	—	15.38
Worcester	76,328	28	14	14.84	11.13	7.42	—	3.71
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	24	9	12.48	12.48	4.16	8.32	—
Fall River	61,203	22	12	22.75	13.65	—	9.10	—
Lynn	51,467	16	—	—	18.75	—	—	—
Lawrence	40,175	12	4	—	8.33	—	—	—
Springfield	39,952	16	5	25.00	—	—	12.50	6.25
New Bedford	36,298	14	2	28.56	21.42	7.14	7.14	14.28
Somerville	33,307	8	—	25.00	25.00	—	12.50	12.50
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	10	3	40.00	—	10.00	20.00	10.00
Chelsea	27,552	6	1	16.66	33.33	—	16.66	—
Haverhill	24,979	11	3	—	18.18	—	—	—
Taunton	24,796	5	2	20.00	20.00	—	—	—
Brockton	24,784	6	1	33 33	33.33	—	16.66	16.66
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	—	—	—	—	—	—	—
Malden	18,932	4	2	25.00	—	—	—	25.00
Fitchburg	17,534	7	1	—	28.56	—	—	—
Waltham	16,651	2	1	—	—	—	—	—
Newburyport	13,839	5	2	—	20.00	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2,546: under five years of age 830; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 466, consumption 346, acute lung diseases 286, diphtheria and croup 170, diarrhœal diseases 62, typhoid fever 98, scarlet fever 35, whooping-cough 32, malarial fever 26, measles 15, cerebro-spinal meningitis 11, erysipelas five, yellow fever one. From scarlet fever, New York 16, Philadelphia, Brooklyn, and Chicago, four each, Baltimore two, St. Louis, Boston, Washington, Fall River, and Taunton, one each. From whooping-cough, New York 14, Brooklyn five, Philadelphia three, Chicago and Washington two each, St. Louis, Baltimore, Boston, and Nashville one each. From malarial fevers, St. Louis nine, Brooklyn eight, Baltimore five, New York three, Nashville one. From measles, New York six, Chicago four, Philadelphia two, Boston, Charleston, and Fall River, one each. From cerebro-spinal meningitis, New York and Washington three each, Nashville two, Chicago, St. Louis, and Boston one each. From erysipelas, New York two, St. Louis, Worcester, and Fall River one each.

In the 28 greater towns of England and Wales, with an estimated population of 9,398,273, for the week ending October 20, the death-rate was 21.0. Deaths reported 3780; infants under one year of age, 1016; acute diseases of the respiratory organs (London) 364, diarrhœa 129, measles 122, scarlet fever 63, fever 38, diphtheria 53, whooping-cough 40.

The death-rates ranged from 16.0 in Leicester to 29.8 in Blackburn; Birmingham 20.7, Bolton 23.7, Bradford 16.4, Hull 16.5, Leeds 25.7, Liverpool 19.7, London 20.0, Manchester 26.1, Newcastle-on-Tyne 22.6, Nottingham 19.4, Portsmouth 20.6, Sheffield 23.0, Sunderland 29.3

In Edinburgh 15.9, Glasgow 21.3, Dublin 24.2.

The meteorological record for the week ending October 27, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Oct. 27, 1888.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean	Maximum.	Minimum.	8 A. M.	8 P. M.	Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in Inches.
Sunday ..21	30.04	40.0	51.0	36.0	61	50	56.0	W.	N. W.		14	24		C.	C.			
Monday ..22	30.21	41.0	52.0	34.0	56	44	50.0	W.	W.		16	8		C.	O.			
Tuesday ..23	30.06	48.0	56.0	38.0	56	74	65.0	W.	S. W.		6	7		F.	O.			
Wednes...24	29.80	48.0	51.0	45.0	93	79	86.0	S. W	W.		9	12		R	C.		10.50	.81
Thursday, 25	30.26	46.0	54.0	41.0	67	60	64.0	N. W.	E.		9	2		C.	C.			
Friday 26	30.50	44.0	49.0	36.0	81	78	80.0	N.	E.		8	12		C.	R.			T.
Saturday, 27	30.30	50.0	53.0	44.0	93	100	96.0	S. E.	E.		9	10		O.	R.		3.30	.05
Mean, the Week.																		

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM OCTOBER 27, 1888, to NOVEMBER 2, 1888.

BAILEY, ELISH I., colonel, surgeon, and Captain JOHN J. COCHRAN, assistant surgeon, detailed for duty on Army Retiring Board, to meet at San Francisco, Cal., for the examination of such officers as may be ordered before it. Paragraph 3, S. O. 253, A. G. O., Washington, October 30, 1888.

Leave of absence for one month, on surgeon's certificate of disability, is granted Major John H. Bartholf, surgeon U. S. Army. (Fort McIntosh, Texas.) Headquarters Department of Texas, San Antonio, Texas, October 10, 1888.

WEISEL, DANIEL, captain, assistant surgeon United States Army. Died at Fort Sill, Ind. Ter., October 30, 1888.

By direction of the Secretary of War, Captain William H. Arthur, assistant surgeon, is relieved from duty at Fort Bowie, Ariz., and will report in person to the commanding officer Fort Bayard, New Mexico, for duty at that post. Paragraph 21, S. O. 250, A. G. O., Washington, D. C., October 26, 1888.

GLENNAN, JAMES D., and ALFRED E. BRADLEY, appointed assistant surgeons United States Army, with rank of first lieutenants, to rank from October 29, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING NOVEMBER 3, 1888.

GIHON, A. L., medical director, ordered to Naval Hospital, Brooklyn, N. Y.

TAYLOR, JOHN Y., medical director, detached from Naval Hospital, N. Y., and to Examining Board.

HUDSON, ADRIAN, medical inspector, promoted to medical director.

BRADLEY, MICHAEL, medical inspector, promoted to medical director.

BATES, NEWTON L., medical inspector, promoted to medical director.

WOOLVERTON, T., surgeon, promoted to medical inspector.

WHITE, C. H., surgeon, promoted to medical inspector.

WOODS, G. W., surgeon, promoted to medical inspector.

DUBOIS, F. L., surgeon, promoted to medical inspector.

COOKE, G. H., surgeon, promoted to medical inspector.

WELLS, HOWARD, passed assistant surgeon, promoted to surgeon.

BERTOLETTE, D. N., passed assistant surgeon, promoted to surgeon.

GAINES, J. H., passed assistant surgeon, promoted to surgeon.

DEXR, EZRA Z., passed assistant surgeon, promoted to surgeon.

STEPHENSON, F. B., passed assistant surgeon, promoted to surgeon.

SOCIETY NOTICE.

The sessions of the twelfth annual meeting of the AMERICAN ACADEMY OF MEDICINE will be held in the governors' rooms of the New York Hospital, 8 West Sixteenth street, New York, Tuesday and Wednesday, November 13th and 14th, 1888. The programme of Tuesday includes the Report of Standing Committee on the Requirements for Preliminary Education in the various medical colleges of the United States and Canada, by Leartus Connor, A. M., M. D., of Detroit, Mich.; and the following papers: "The Causes and Prevention of the Opium Habit and other Allied Affections," by James C. Wilson, A. M., M. D., Philadelphia, Pa.; "The Influence of the Work of the Illinois Medical Practice Act upon Medical Education," by H. A. Johnson, A. M., M. D., Chicago, Ill.; "The Importance of Practical Obstetrics in the Course of Instruction given by Medical Schools," by Theophilus Parvin, A. M., M. D., Philadelphia, Pa. Address by the president, Frederick Henry Gerrish, A.M., M.D., Portland, Me. "A few words concerning the Academy," by R. Lowry Sibbet, A. M., M. D., Carlisle, Pa.; "Toleration and Intolerance in Medicine; Codes of Ethics; What Code should the Academy Adopt?" by Henry I. Bowditch, A. M., M. D., Boston, Mass.; "The Relations between the Consultant or Specialist and the General Practitioner," by L. Duncan Bulkley, A. M., M. D., New York; "The Evils of a Medical Dialect Separated Widely from Classical English," by Edmund Andrews, A. M., M. D., Chicago, Ill. At nine o'clock, P. M., annual collation of the Academy, at Martinelli's, Fifth Avenue. Tickets for the Collation (fixed, by resolution of the Academy, at TWO DOLLARS each) may be obtained by remitting the amount to Dr. L. Duncan Bulkley, 4 E. 37th Street, New York. Wednesday, November 14th:—Reading of papers: "The Multiplication of Useless Drugs," by C. C. Bombaugh, A. M., M.D., Baltimore, Md.; "The Necessity for Post-Graduate Instruction in the Present State of American Medical Education," by Charles C. Lee, M. D., New York, N. Y.; "Which is the Liberal School?" by Charles McIntire, jr., A. M., M. D., Philadelphia, Pa.; "The Treatment of Uterine Diseases by other than Surgical Means," by W. E. Waugh, A. M., M. D., Philadelphia, Pa.; "The Famous Historic Masters of the Healing Art were Men of Classical Education," by George J. Fisher, A. M., M. D., Sing Sing, New York.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—A Regular Meeting of the Society will be held Monday, Nov. 12, at the Medical Library, at quarter of eight P.M.

Reader, Dr. R. M. Hodges. Subject, "Excision of the Breast for Cancer." Drs. F. G. Morrill and E. H. Bradford will report a "Case of Tubercular Peritonitis apparently cured by Laparotomy."

F. B. HARRINGTON M.D., *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

The Dispensatory of the United States of America. By Dr. Geo. B. Wood and Dr. Franklin Bache. 18th edition, rearranged, thoroughly revised and largely rewritten, with illustrations by H. C. Wood, M. D., LL.D., Joseph P. Remington, Ph. M., F. C. S., and Samuel Sadtler, Ph. D., F. C. S. Philadelphia: J. B. Lippincott Company. 1888.

Der Klumpfuss und seine folgen für das übrige knochengerüst. Nach neuen untersuchungen von Dr. G. Hermann von Meyer, ordentl. professor der Anatomie in Zürich. Mit 17 abbildungen im text. Jena: verlag von Gustav Fischer. 1888.

A Text-book of Physiology. By M. Foster, M.A., M.D., LL.D., F.R.S., Professor of Physiology in the University of Cambridge, and Fellow of Trinity College, Cambridge. With illustrations. Fifth edition, largely revised. Part I, comprising Book I: Blood; the Tissues of Movement; The Vascular Mechanism. London: Macmillan & Co. New York. 1888.

The Failure of Dr. J. B. Thomas' Treatment of Urethral Stricture by Electrolysis. By Robert Newman, M.D., of New York. Reprinted from the "Journal of the American Medical Association," September 8, 1888. Chicago. 1888.

How far can Legislation Aid in Maintaining a Proper Standard of Medical Education? A Paper read before the American Social Science Association, at the Annual Meeting, held at Saratoga, September 5, 1888. By W. A. Purrington, Counsel of the Medical Society of the County of New York. Boston. 1888.

A new Series of Metric Test-Letters for Determining the Acuity of Direct Vision for Form. By Charles A. Oliver, M.D., Philadelphia. A Paper read before the American Ophthalmological Society at the Annual Meeting held at the Pequot House, New London, Conn., July 15th and 16th, 1885. Extracted from the transactions of the Society.

A Case of Extrauterine Pregnancy; Embryo destroyed by a Twenty-Milliampere Current without Interruptions; together with Remarks on the Best Manner of Using Electricity for this Purpose. By A. H. Buckmaster, M.D., of Brooklyn. From the Medical News, July 21, 1888.

Diseases of the Skin: Their Description, Pathology, Diagnosis, and Treatment. By H. Radcliffe Crocker, M. D. Lond., etc., etc. With 76 Illustrations. Philadelphia: P. Blakiston, Son & Co. 1888.

Students' Guide Series. The Diseases of the Chest. Including the Principal Affections of the Pleuræ, Lungs, Pericardium, Heart, and Aorta. By Vincent D. Harris, M. D. Lond., F. R. C. etc., etc. With 55 Illustrations. Philadelphia: P. Blakiston, Son & Co. 1888.

Elements of Practical Medicine, by Alfred H. Carter, M. D. Lond., M. R. C. P. London, etc. Fifth Edition. London: K. K. Lewis. 1888.

Original Articles.

THE DIAGNOSIS AND MEDICAL TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.[1]

BY REGINALD H. FITZ, M. D.,

Professor of Pathological Anatomy in Harvard University, and Physician to the Massachusetts General Hospital.

INTUSSUSCEPTION.

Of all the varieties of acute, internal, intestinal obstruction that which most often presents the clearest clinical picture is intussusception or invagination.

Its relative frequency among the more important cases is nearly constant at 39%, and ninety-three cases are included in the series collected since 1880. None were recognized as such unless the diagnosis was substantiated at an autopsy, by laparotomy, rectal examination, or by the discharge of a slough.

It occurred among males in fifty-two cases, among females in twenty-seven; about two-thirds of the cases were thus found in the former sex and one-third in the latter. The relative frequency at various periods of life is shown below:—

Year of age.	Number of cases.	Per cent.
Under 1	31	34
From 1–2	5	
2–3	3	
3–4	1	
4–5	3	
5–6	4	
6–7	1	
7–8	1	
8–9	2	
Under 10	51	56
From 10–20	6	
20–30	13	
30–40	9	
40–50	5	
50–60	2	
60–70	4	
70–80	1	
	91	

Exciting causes were absent in forty-two cases, 45%; and the following were possible causes in fifty-one cases, 55%:—

Diarrhœa	in 13 cases
Habitual constipation	in 12 "
Protracted abdominal pain	in 7 "
Indigestible food	in 6 "
Violent exertion	in 4 "
Injury	in 3 "
	45 "

Single cases occurred in the course of typhoid fever, gastro-enteritis, variola, pregnancy, after an operation for incarcerated hernia, and after the use of cathartics, — in all, six cases. A preceding like attack was observed in two instances.

These possible factors are of but little value in differential diagnosis; and their frequency without injurious sequences makes their further consideration of little or no importance.

Our knowledge of the method of production of the invagination has been rendered relatively exact by the experiments of Nothnagel[6] and of Senn.[7] The former found that a contracted bit of intestine pushed itself into a passive portion from above downwards. This contraction was induced[8] by a faradic current, and in the course of a minute or two the invagination might become four inches long. He found that the internal and external cylinders were formed below the tetanized part almost without exception. If the intestines were paralyzed by crushing no invagination occurred. These observations go to show that the invagination is always descending and is rather spasmodic than paralytic. Senn also found that the invagination was early formed in a relaxed bowel and could not be produced in the contracted gut.

The most important symptoms of intussusception are abdominal pain, nausea or vomiting, tympany, tumor, bloody stools, and tenesmus.

Their relative frequency was reported as follows:—

Pain	in 65 cases	= 70 per cent.
Nausea or vomit	in 66 "	= 71 "
Tympany	in 31 "	= 33 "
Tumor	in 64 "	= 69 "
Bloody stools	in 56 "	= 60 "
Tenesmus	in 33 "	= 35 "

The date of the appearance of these principal symptoms of intussusception is represented in the following table:—

Date.	Pain.	Nausea or Vomit.	Tympany.	Tumor. Abdomen	Tumor. Rectum.	Bloody Stools.	Tenesmus.
1st day	61	51	1	9	10	32	15
2nd day	2	4	2	12	8	7	4
3rd day	1	3	8	8	7	6	5
4th day	1	3	8	2	3	3	
5th day		1	4		2	1	2
6th day			3	3	4	3	3
Later or not given		4	5	5	6	4	4
Total No. of cases	65	66	31	39	40	56	33

Where pain was recorded as a symptom, it appeared on the first day in nearly all the cases. Its early absence, on the contrary, was conspicuous in rare instances. It was usually described as abdominal, and was sometimes located at the navel, in the stomach and epigastrium, and in the right iliac fossa.

It was referred to the left iliac fossa in rectal or colico-rectal varieties of intussusception. Of five cases in which the pain was said to be at the navel, the intussusception was of the ileum in three instances. The seat of the pain in the right iliac fossa frequently led to the diagnosis of typhlitis, perityphlitis, or typhoid enteritis.

It was usually sudden, severe, perhaps violent, and was frequently spasmodic. In one case it was so intense as to lead to an attempt at suicide. Its importance in the diagnosis of the seat of the intussusception was merely relative. The possibility is obvious that its seat in either iliac fossa might serve to differentiate an intussusception of the colon or rectum from one near the cæcum. In like manner its position at the navel might serve to suggest the small intestine as the seat.

Nausea or vomiting occurred on the first day in nearly nine-tenths of the cases in which a definite date could be fixed. If nausea occurred in the first instance it was rapidly followed by vomiting. The latter presented no characteristics of any value in

[1] Continued from page 449.
[6] Nothnagel. Zeitschr. f. klin. Med., 1882, iv. 555.
[7] Senn. Annals of Surgery, 1888, viii. 4.
[8] Nothnagel. Wien. Med. Bl., 1883, v. 1433.

differentiating this variety of intestinal obstruction, except the rarity of its becoming fecal. Among the ninety-three cases of intussusception fecal vomit is noted in only twelve patients, and it appeared on or after the fourth day in all but two of these. In nearly one-third of the twelve cases, the obstruction was fixed at or below the cæcum. In two-thirds the intussusception was of the small intestine; in at least one-half of these certainly away from the valve, in the other half possibly near the valve. This symptom, therefore, has no absolute value in determining the existence of an intussusception; if the latter is rendered probable, fecal vomit suggests that the seat is at or above the cæcum.

Tympany is perhaps the least important symptom of obstruction by intussusception. It occurred only in one-third of the cases, and in one-half of these on the third and fourth days.

A tumor was found in sixty-one cases, nearly two-thirds of the entire number. It was found in the abdomen only in twenty-three cases, in the rectum only in twenty-one cases, and in the abdomen and rectum in sixty-one cases. It is stated to have been absent in four instances, while in twenty-eight its presence is not mentioned. It was found on the first day in more than one-third of the cases, on the second day in one-fourth, and on the third day in more than one-fifth of the cases. Thus in more then one-half of all cases it was present in the first two days, and in the first three days in more than three-fourths of the cases. The relative frequency of its presence in the abdomen or rectum on these days is shown in the preceding table. In the cases of intussusception of the small intestine a tumor was not observed. The general characteristics of the tumor of intussusception are sufficiently well known. It was often associated with a relaxed sphincter.

The rectal discharges in intussusception are of the greatest importance in diagnosis, especially as they not infrequently continue throughout the disease. Diarrhœa may immediately precede the attack, and the alvine discharges may be wholly fecal at the outset, but rapidly become mixed with blood. Pure blood or blood and mucus are the more frequent discharges. They may occur spontaneously, or immediately follow a rectal examination, or the use of an enema.

Bloody stools were recorded in three-fifths of the cases; and occurred on the first day in the same proportion of cases where a definite date was given.

Tenesmus was stated to be present in nearly one-third of the cases, in about the same number as was tympany. Its presence on the first day was noted in one-half of these, when a fixed date was mentioned.

Fever occurred in twenty-six cases — 28% of the entire number. Its absence in five was conspicuously stated, while no mention was made in sixty-two instances. The temperature was elevated on the first day in four cases, on the second in seven, on the third in eight, on the fourth in four, and in one on each of the three succeeding days.

Intussusceptions are classified anatomically according to the part of the bowel affected. They are, without more minute subdivision, of the small intestine into itself, into the cæcum, or into the colon, of the colon into itself or rectum, and of the rectum into itself. The relative frequency of these varieties has a decided practical importance; and of sixty-five cases the variety was as follows: —

Ileo-cæcal or ileo-colic	48 cases	= 75 per cent.
Enteric	8 "	= 12 "
Rectal	5 "	= 8 "
Colico-rectal	4 "	= 5 "
	65	100

The intussusceptions in the vicinity of the cæcum thus represented three-fourths of the whole number. The question as to the variety in any given case will lie essentially between this form and that of the small intestine away from the valve, which occurred in only one-eighth of the cases. The rectal and colico-rectal varieties are usually easily recognized on rectal examination.

These figures differ considerably from those of Leichtenstern,[9] based upon a collection of four hundred and seventy-nine cases, which are as follows: Ileo-cæcal and ileo-colic, 52%; ileal (enteric), 30%; rectal and colico-rectal, 18%. The chief difference lies in the greater frequency of the varieties originating near the cæcum in the smaller series and in the lesser frequency of the enteric variety. It is possible that the latter difference may result from the more critical exclusion of post-mortem cases. The former difference may be due to the inclusion, for practical purposes, of ileal intussusception near the valve among ileo-cæcal forms.

The mortality in cases of indisputable intussusception was very great, excepting in the rectal variety. The following table shows the number and date of deaths of other varieties than the rectal, when the treatment was by other measures than surgical: —

Date.	Death.
1st day	2
2nd day	2
3rd day	6
4th day	3
5th day	5
6th day	1
1st week	19
2nd week	6
3rd week	1
Not given	9
	35
Recoveries	16
	51

It thus appears that of the above series 69% died and 31% recovered. Of the fatal cases nearly one-half, and perhaps a larger proportion, died during the first five days. The third, fourth, and fifth days were especially fatal.

The following table shows the mortality after surgical interference: —

Date of operation.	No. of cases.	Deaths.	Recovery.
1st day	1	1	0
2nd day	1	0	1
3rd day	6	5	1
4th day	4	4	0
5th day	4	2	2
6th day	4	3	1
7th day	2	2	0
8th day	4	4	0
9th day	3	3	0
Not given	7	6	1
	36	30	6

The mortality after surgical treatment was thus 80%, against 69% of medical treatment.

[9] *Op. cit.*, 501.

TWISTS AND KNOTS.

Acute obstruction from volvulus or twist occurred in forty cases, and from knots in two instances. As already stated, the symptoms from knots are essentially the same as those from strangulation. Their occurrence is so rare that they may practically be disregarded.

Of the forty cases of volvulus since 1880, the vast majority were axial, but in rare cases a part of the small intestine was twisted about another portion. As but two instances of the latter variety occurred in the series these have been included among the former, although their symptoms are those of cords and bands, while their prognosis is, perhaps, more favorable. Their number is such as not to materially modify the conclusions to be drawn.

Of thirty-eight cases of volvulus twenty-six occurred in males and twelve in females; 68% in the former and 32% in the latter.

The ages of the patients was as follows in thirty-four cases: —

Year of age.	Number of cases.
6	1
From 15—20	4
20—25	2
25—30	2
30—35	6
35—40	6
40—45	3
45—50	2
50—55	1
55—60	5
65—70	1
70—73	1
	34

The extremes of life represented are therefore six years and seventy-three years. The greatest number of cases in any ten years was between the ages of thirty and forty years, and was about one-third of all.

In the etiology of this class of cases of obstruction, the previous occurrence of a similar attack was observed in five instances. A constipated habit was noted in six cases. Hernias existed in three. Two of the patients were insane, and one was paralytic. One suffered from chronic diarrhœa. Upon another the operation of ovariotomy was performed six years before the obstruction took place. In four cases violent exercise was the exciting cause; in another an attack of diarrhœa; and in still another irritating food.

The following table shows the relative frequency of the principal symptoms of volvulus: —

DATE.	Pain.	Nausea or vomiting	Tympany.
1st day	19	9	1
2nd day		2	1
3rd day			3
4th day	2	2	3
5th day			1
6th day		1	1
7th day			2
Later or not given	3	1	10
Total No. of cases	24	15	22

Abdominal pain was thus the first symptom of importance in nearly one-half of all the cases, and it occurred on the first day in nearly all where the date was recorded. It was sudden in one-half of the above number. It was either severe, intense, extreme or violent in as many cases, and in only one instance was there a record of no particular pain. It was seated near the navel in four cases, in the left abdomen and in the left iliac fossa each in two instances; in the lower abdomen, left groin, right iliac fossa, and near the stomach each in one case.

It was found, therefore, most often, in one-fifth of the cases, on the left side, then at the navel in one-sixth of the cases, and elsewhere in the abdomen in small but equal proportion.

The pain was stated to be associated with nausea or vomiting in three-fifths of the cases where a date was given. In two cases there was no vomit as late as the eighth day, in one till the eleventh day, and in another there was none at all.

The vomit was fecal in six cases,— in three on the fourth day, in one on the sixth day, in one on the eleventh day, and in another no mention is made of the date of its occurrence. It was slight in two of the cases. It occurred in four instances where the small intestine was obstructed, and in two where the large intestine was twisted. On the contrary, in three cases where the volvulus was of the small intestine, there was no fecal vomit.

Although tympany was recorded in more than one-half of the cases, it was present during the first week in only about one-half of these. Its occurrence during the first week was oftenest on the third and fourth days. It might be much on the first day, or slight on the fourth day. It was described as enormous on the ninth day.

Tumors are not a characteristic of twist, but the abdominal swelling might be so circumscribed as to suggest a tumor. When the flanks alone were swollen the twist was of the large intestine; when the umbilical region was conically distended the obstruction was either of the large or of the small bowel. Visible coils were present only in three cases. In one the coil was the transverse colon, the twist being of the sigmoid flexure. In a second the sigmoid flexure was also twisted. In the third the volvulus was probably of the small intestine.

A record of the temperature was made in sixteen cases. In four there was no elevation on the third, sixth, and seventh days. In two the temperature was fairly normal or slightly elevated. Of the cases of distinct elevation, there were three in which the temperature on the fourth day was between 99.6° F. and 101.3° F. The temperature is first recorded as elevated on the second, third, fifth, sixth, ninth, and tenth days, each in one case. Since in only about one-fourth of the cases was there any noteworthy elevation of temperature, and since in two-thirds of these cases it took place on no particular day between the second and tenth days, it is obvious that fever is no important characteristic of obstruction from a twist.

Hiccough was present in three cases, apparently without especial dependence on the part of the intestine twisted.

Occasional records were made of the condition of the urine. It was rarely reported as modified in quantity or quality. In one case only half a pint was passed on the seventh day. In another four

ounces were passed in twelve hours on the ninth day. There was retention on the fourth day in a single case. In another patient an increased quantity of indican was reported on the eighth day. In all the other cases there was either no record of its condition or the flow was reported as free or as abundant.

The seat of the twist is shown in the following table.

Seat.	Number of Cases.	Per cent.
Sigmoid flexure	19	49
Ileo-cæcal region in 6 Cæcum in 5	11	29
Small intestine	5	13
Ascending colon	2	5
Colon	1	2
Descending colon	1	2
	39	100

It is thus evident that about one-half of the cases of twist took place at the sigmoid flexure, and that nearly one-third of them were present in the ileo-cæcal region. It is further evident that, for all practical purposes, 87% of the cases occurred in the large intestine.

An absolute diagnosis of volvulus is only to be made by abdominal section, either before or after death. Death is, therefore, to be regarded as the probable result of this lesion unless the surgeon affords relief. This statement is made despite the fact that in five of the cases there was the previous history of a similar attack.

Death occurred as follows in cases not treated surgically: —

Date.	Number of cases.
1st day	1
3rd "	2
5th "	2
7th "	3
8th "	2
9th "	1
12th "	1
Not given	3
	15

The date and result of operative interference is given in the following table: —

Date of operation.	Number of cases.	Death.	Recovery.
3rd day	2	1	1
4th "	1	1	0
5th "	3	2	1
6th "	2	2	0
7th "	1	1	0
9th "	6	5	1
10th "	1	1	0
11th "	1	1	0
16th "	1	0	1
26th "	1	0	1
Not given	6	6	0
	25	20	5

It is apparent from the above tables that all of the cases not treated surgically died, and that of those thus treated one-fifth recovered.

Since, of known dates of death, at least one-half took place before the eighth day, it is obvious that medical treatment should cease before this date. Furthermore, since, of the cases treated by the surgeon from the third to the sixth day only one-third recovered, it is suggested that medical treatment should cease at the former date.

—The death of Prof. Bamberger is reported from Vienna. He will be a serious loss to the department of clinical medicine in the medical school and general hospital.

ABDOMINAL SURGERY AT THE MASSACHUSETTS GENERAL HOSPITAL.

SERVICE OF J. C. WARREN, M.D., AND M. H. RICHARDSON, M.D.
REPORTED BY HOMER GAGE, A. M., M. D.

The following cases occurred during a service as senior surgical house pupil at the Massachusetts General Hospital, and are a fair illustration of the amount and character of work in abdominal surgery done at that hospital. The operations were all performed in the large operating theatre[1] of the hospital, under full antiseptic precautions, and the patient was in each case returned to a private room. On the day before the operation the patient was given a thorough sponge bath with soap and corrosive sublimate. The abdomen was scrubbed with a brush, carefully dried, and then covered with an antiseptic dressing of salicylated cotton and carbolized gauze, retained in position by a tight swathe. The bowels were moved the morning of the operation, and the patient catheterized immediately before etherization. All instruments were thoroughly washed, and then placed in a 2½% solution of carbolic acid. The silk used for tying the pedicle, and suturing the abdominal wound, had been previously boiled, and kept in 50% alcohol, and, with the catgut, was allowed to soak for several hours in corrosive sublimate, 1-2000. The only sponges used were those devised by Dr. J. W. Elliot, prepared from Germantown wool, boiled for several hours, and kept in bichloride until wanted. The abdomen of the patient was surrounded on all sides by warm towels wrung out in a sublimate solution, and the hands of the operator and assistants were thoroughly scrubbed and cleansed.

After the operation, the wound was freely dusted with iodoform, and a dressing applied which consisted of successive layers of iodoform gauze, salicylic cotton, and carbolized gauze. Over all was tightly drawn a broad plaster swathe. Absolute rest was maintained for the first forty-eight hours, and all nourishment withheld. Morphia was given only as required for the relief of pain, while the distressing thirst which often followed these operations was relieved by the free administration of cracked ice. In but two of these cases, to which reference will again be made, was there any discomfort from nausea or vomiting. At the end of forty-eight hours, or even earlier, if the temperature and general condition of the patient were satisfactory, or particularly if there had been a free discharge of flatus from the bowels, liquid nourishment, in the form of milk and meat broths, was given, and by the tenth day the patient was expected to be on full diet.

EXPLORATORY INCISION.

Case 1. Female, nineteen years of age, abdominal enlargement for three months. Operation by Dr. Richardson revealed cirrhosis of liver with ascites. Death on third day, apparently from exhaustion. No rise of temperature, no abdominal distention or tenderness, no nausea or vomiting.

Case 2. Male, forty-six years old, abdominal tumor for two months. Operation by Dr. Richardson disclosed cancer of liver. The wound healed

[1] They were for the most part done on other than public operating days, and before a selected number of students.

rapidly, and he was taken from the hospital by his friends on the ninth day.

Both of these cases had been under observation for some time, and in neither had a reasonably positive diagnosis been made. Both were losing ground rapidly, and the operation was proposed as a last resort to get at the exact cause of the trouble, and, if possible, to remove it.

INGUINAL COLOTOMY.

Case 3. Female, forty-two years old. Cancer of rectum for four years. Operation by Dr. Richardson.

Case 4. Male, twenty-five years of age. Cancer of rectum for seven months. Operation by Dr. Warren.

In these cases, an incision about four inches long was made parallel to and one finger's-breadth removed from Poupart's ligament. On opening the peritoneal cavity, the sigmoid flexure was in each case directly under the incision, readily recognizable from its mesentery and the longitudinal striæ of its walls.

In the first of these cases, there had been almost complete obstruction for one week, associated with intense pain. The bowel was first stitched to the wound, and at the end of four days opened. The relief following the establishment of the artificial anus was complete, and at the end of four weeks the patient's general condition and comfort had very much improved.

In No. 4, the patient's youth suggested a specific origin, but no specific history could be obtained, nor was there any change in the local condition after a prolonged course of specific treatment. At the operation, the posterior wall of the bowel was drawn well forward, so that when the opening was made on the third day the bowel below the artificial anus was completely shut off. The almost constant muco-purulent bloody discharge which had existed for several weeks prior to the operation ceased within a short time, and when he left the hospital, at the end of one month, his general appearance was very much improved. He reported June 13th later, having gained twenty pounds, and been perfectly free from pain. On examination of the rectum, the anus was found puckering in and contracting, the hard nodular mass still present, but with no extension or ulceration. He was having a truss made to support and occlude the opening.

MEDIAN COLOTOMY.

Case 5. Male, forty-six years old. Cancer of ascending colon, two years' duration. Exploratory incision. Median colotomy. Recovery.

This case presented a tumor as large as a hen's egg midway between the anterior superior spine and the lower margin of the ribs on the right side, of irregular outline, freely movable, and the seat of constant pain. Although believed to be malignant, its mobility seemed to offer a reasonable chance for removal. The tumor was disclosed through a median incision, and proved to be a cancer of the ascending colon, with coils of small intestine adherent. There was also a cancerous infiltration of the mesenteric glands. Its removal being out of the question, and the calibre of the bowel having been already considerably narrowed, an artificial anus was established by stitching a portion of the bowel between the cæcum and the tumor to the incision in the median line. The patient left the hospital four weeks after the operation very much stronger, and entirely free from pain.

OVARIOTOMY.

Case 6. Married, twenty-eight years old. Several miscarriages, no children; painful, irregular, and profuse menstruation for several months. Removal of parovarian cyst by Dr. Warren. Recovery.

Case 7. Married, twenty-two years old. No children; miscarried at fifth month two years ago. Tumor in left iliac region for three months. Cyst of left ovary. Removal by Dr. Warren. Recovery.

Case 8. Unmarried, thirty years old. Tumor in right iliac region for six weeks. History of a recent attack of local peritonitis, from which she had just recovered. Cyst of right ovary removed by Dr. Richardson. Recovery.

These were small cysts, all of short duration. Case 6 had a small abscess about one stitch hole, but otherwise made an uninterrupted recovery. She reported three months later, entirely free from the catamenial irregularity which had been present before the operation, but still suffering from incontinence of urine. The latter trouble was due to a urethro-vesical fistula, resulting from an operation in Sweden. She was advised to postpone any further operation for its relief.

In Case 7 menstruation had been scanty, irregular, and painful for two years. The tumor was as large as a cocoanut, and contained about a pint of thick chocolate-colored fluid. The patient seemed perfectly well until the fourth day, when she began to complain of some abdominal pain and slight nausea, which continued at intervals for several days. At the end of a week, all the stitches were removed, and the wound found to have closed by first intention. There was slight tenderness in the right iliac region, and some diarrhœa. From the seventh to the fourteenth day there was a gradual rise of temperature without any apparent cause, and on consultation it had been decided to reopen the wound. On the evening before the day appointed for the operation, the patient had a large movement of the bowels following an enema, and the temperature on the next morning was normal. There was no subsequent rise, and convalescence was uninterrupted. Just what pathological change gave rise to the unfavorable symptoms in this case must be largely a matter of conjecture. Of one thing, however, we are sure — that it was entirely relieved by a free movement of the bowels. Speaking of peritonitis following an operation, Greig Smith says that "a case seen with distention, sickness, and restlessness has a Seidlitz powder prescribed, to be followed by a hot water or turpentine enema; and it is almost taken for granted that at the visit next day the patient will have a flat abdomen, the sickness will have disappeared, and she will express herself as feeling infinitely better." In his experiments on intestinal suture in dogs, Dr. Warren found, on reopening the abdominal wound from three to eight days after the operation, that the sutured point was in each case more or less concealed by the matting together of mesentery and intestines about the resected spot. Although the

passage of fluid through these coils was in nowise interfered with, there was probably a certain amount of paralysis from the local inflammation. The breaking up of these adhesions by the free peristalsis set up by an enema or saline cathartic, may have the same beneficial effect as when the adhesions are forcibly broken up in cases of laparotomy for suppurative peritonitis.

Case 9. Widow, fifty-nine years old; two children, menopause eight years ago. Multilocular cyst of right ovary, duration one year. Removed by Dr. Warren. Recovery.

At the operation, a small subserous fibroid was found attached to the anterior wall of the uterus, undergoing calcareous degeneration. Its removal was not attempted. During her convalescence she had an attack of facial erysipelas, without, however, any implication of the wound, and she was discharged well in twenty-four days. One month later she was reported to be in excellent health.

Case 10. Married, fifty-two years old. Youngest child fourteen years old; climacteric seven years ago. Dermoid cyst of right ovary, five years' duration. Removed by Dr. Richardson. Recovery.

The tumor was very firmly adherent, especially over the anterior surface. Its contents, which were at first supposed to be pus, proved to be a pure yellow fat, that solidified completely on cooling. There was a mass of black hair as large as two fists within the cyst, and, on its walls, two rudimentary teeth.

Case 11. Married, fifty years old. Ventral hernia for three years. Symptoms of incarceration for one week. Radical cure by Dr. Richardson. Recovery.

Ovariotomy had been performed on this patient four years previously, and the hernia had developed in twelve months. The incision was made parallel to but a little to the left of the scar, the opening enlarged, and the peritoneal surfaces approximated as in a primary laparotomy.

Case 12. Widow, thirty-two years old. Chronic suppurative salpingitis. Removal of tube and ovary by Dr. Richardson. Recovery.

This patient gave a history of several artificially induced abortions; the last nine months before her admission to the hospital. Since then her catamenia had been irregular and increasingly painful. She had suffered also from a severe and almost constant pain across the lower abdomen, following the course of the right sciatic nerve, increased by exercise, and preventing her from attending to ordinary household duties. During this same time she has noticed a slight enlargement in right side of abdomen. The uterus was deflected to the left, two and three-fourth inches deep, while to the right of, and intimately connected with, the uterus was an indurated mass as large as an orange. Exploratory puncture through the posterior vaginal wall revealed the presence of pus. The tumor was exposed by a median incision, and found to be intimately adherent, not only to the uterus but also to the floor and sides of the pelvis and to the intestines. There was no capsule or pedicle, and the fallopian tube, ovary, and broad ligament were indistinguishable. Twelve ounces of thick pus were evacuated, and the mass finally removed with great difficulty. During the operation some very large vessels were ligated and cut, and considerable pus escaped into the pelvis from rupture of the cyst. A glass drainage tube was introduced into Douglas's pouch, which projected through the main dressing, and from which the accumulated fluid was withdrawn twice a day by means of a catheter. The tube was removed on the fifth day, and the patient was up and about three weeks after the operation. She has gained thirty pounds, is now free from pain, well, and strong. Dr. R. H. Fitz examined the tumor, and reported that it was a "cyst with dense fibrous walls; its inner surface, rough, red, and easily scraped away. In the immediate vicinity and intimately adherent was a dilated tube nearly as large as the little finger, the wall of which was thickened and fibrous, and the inner surface lined with a membrane resembling that of the cyst. Diagnosis — chronic salpingitis with probable cystic degeneration."

No. 13. Fibroid of uterus with umbilical hernia. Herniotomy by Dr. Warren for strangulation of hernia. Recovery. Hysterectomy for sloughing fibroid by Dr. Warren. Death.

This case presented many features of peculiar interest. A single woman, thirty-eight years old, had first noticed a tumor seven years ago in the lower left side of the abdomen. It had grown with especial rapidity during the past year, and with its growth there had developed an umbilical hernia as large as two fists. This had been irreducible for three months, but gave rise to no discomfort until three days ago, when she began to have frequent attacks of abdominal pain, with nausea and vomiting. There had been no movement of the bowels and no passage of flatus for forty-eight hours. The hernial protrusion was tense, tender, and moderately painful. The skin was generally reddened and acutely inflamed at the summit, where there was a dry black slough as large as a fifty-cent piece. It was tympanitic, with a doubtful impulse; gurgling on pressure. The abdomen was enlarged to the size of pregnancy at term, and was tympanitic, except on the left side, where there was a large dull area in the hypogastric, inguinal and lumbar regions. These were occupied by a slightly movable tumor of distinct outline. The symptoms of strangulation continuing, on November 12th the hernial sac was opened, and found to consist of four pouches separated by thick, fibrous walls, each communicating with the other through a small opening. Two of these pouches contained three to four ounces each of dark serum, while the two on the left of the median line contained a loop of intestine, three inches long, dark-colored and lustreless, with no omentum. At the middle of this loop was a constriction so tight that the calibre of the bowel was diminished one half. The muscular and mucous coats were cut and had retracted, leaving a white glistening ring around the bowel one quarter inch wide. The contents of the bowel could however be readily passed through without leaking. After enlarging the opening the intestine was replaced, and the wound closed tightly by a double row of braced sutures. The patient had several large loose dejections on the third day, and improved steadily until the ninth day, when she had a chill, with severe abdominal pain, nausea, and vomiting. During the next two weeks she had six chills at irregular intervals, all associated with the same evidences of abdominal

distress. The pain and tenderness were referred chiefly to the region of the tumor. This tumor had grown very slowly without causing any local or constitutional disturbance. It was hard when first examined, easily movable, and intimately connected with the uterus. Vaginal examination threw no light on its origin. After the operation on the hernia it seemed to grow softer, and, over the lower part of the anterior surface, distinctly fluctuating. That the abdominal symptoms could be in anywise referable to the previous strangulation of the bowel seemed unlikely in view of the absence of constipation and the free passage of flatus. The possibilities of a pyelitis from pressure, of a suppurating cyst of the ovary, and of a sloughing fibroid of the uterus were all directly suggested, with the chances rather in favor of the latter condition. At all events it was evident that she was failing rapidly as the result of some inflammatory change within or about the tumor, and Dr. Warren, after consultation, decided upon its immediate removal. With the greatest difficulty the mass was delivered through a median incision reaching from above the umbilicus almost to the symphysis. It was found to occupy the entire left side of the abdomen and to extend above the lower margin of the ribs. It was mainly solid, very friable, and presented on section the appearance of a fibro-myoma. In several places, notably on the anterior surface, it had undergone cystic degeneration, and the resulting cavities were filled with a thick purulent fluid in which were floating bits of sloughing tissue. On the left side were to be seen the left broad ligament with ovary and tube. No trace of these structures could be found on the right. The body of the uterus was completely lost in the tumor. A Koeberle's ecraseur was adjusted as low down as possible, and the mass cut off even with the abdominal walls. A glass drainage tube was placed in the posterior cul-de-sac, the stumps dressed with iodoform and iodoform gauge, and the wound closed about it. The patient improved slightly during the first forty-eight hours, but died on the fifth day.

An autopsy was made by Dr. R. H. Fitz, who reported as follows: —

"Intestines adherent to the peritoneum by recent adhesions throughout the greater part of the lower half of the abdomen. Douglas' fossa was filled with adherent coils of intestine, and contained two ounces of thin, dirty, red fluid. Peritoneal surface at seat of adhesions thickened, moderately opaque, with numerous patches of friable false membrane.

Left kidney one-fourth larger than right, soft, capsule adherent, cortex opaque yellowish gray, tubular regions indistinct. Right kidney normal in size, with similar gross appearances. The pelvis and ureter were diminished in volume. The mucous membrane spotted with patches of a pale red, granular material, resembling fine grains of seed.

The uterus was represented by a stump. The remains of the canal were two inches long, its anterior part intimately connected with a dirty gray, soft fibroid mass as large as a small lemon, apparently subperitoneal. On the right side of the canal, also subperitoneal, were two fibrous nodules, size of English walnuts. No ovaries or fallopian tubes seen. Left ovarian vein contained a dark red thrombus adherent in places.

Intestines: Two feet above the ilio-cæcal valve was a loop of ilium six inches long, distended, of a dirty gray color. On its peritoneal surface occasional fibrinous patches; also a fibrous band, easily torn, forming a bridge between the root of the mesentery and the peritoneal portion of the intestine. On section the mucous membrane thin, especially at the lower part of the loop, where the muscular coat was also thin in places. At the lower part of the pigmented loop was an annular ulcer one-quarter inch wide, with a slight constriction. The ulcer extended through the mucous and muscular coats over the greater part of its surface. Near the mesenteric insertion was a pouch as big as a pea, extending from the ulcer into the mesentery. The mesenteric lymph glands in the immediate vicinity of this loop were enlarged to the size of beans, moist, reddish gray. Near root of mesentery a nodule as big as end of thumb. On section it showed a tough fibrous wall and soft putty like contents.

Diagnosis — laparotomy: acute peritonitis; hysterectomy: annular ulcer of intestine; hyperplastic spleen; granular degeneration kidneys and liver.

REPORT PROGRESS — ORTHOPEDIC SURGERY.

BY E. H. BRADFORD AND R. W. LOVETT.

POTTS' DISEASE — PARALYSIS.

Dr. Elliot has made a most careful pathological and experimental study of the pressure paralysis of Potts' disease, and has reached the following conclusions: that the lesion begins as a simple mechanical pressure on the cord in the form of abscess products, thickened dura, or bone, that the inflammatory process in the dura is a limited one, and that the medullary surface of the dura is almost always normal. As there is no tendency of the cord to be involved by the specific carious process going on in the bone, the cord lesion is purely the result of pressure.

That the presence of sclerotic tissue at the site of the cord lesion in cases of long standing is not an evidence that the process was originally an inflammatory one, and experimental physiology gives no evidence of an inflammatory lesion following experimental compression of the cord. And pathological findings in recent cases reveal but few instances where the original lesion seems to have been inflammatory. In short, his research would lead to the conclusion that the original cord lesion is not, as a rule, inflammatory.[1]

Mr. Wright has recently attacked a case of dorsal Potts' disease by operation in the hope of relieving a severe and progressive paralysis. The disease was in the mid-dorsal region and an incision was made over the spines along the angular prominence. Three laminæ on each side were divided, and with their spinous processes were removed, exposing the cord, which was found surrounded with a buff-colored, tough, leathery substance. This was cut away with scissors, and the muscles and skin were brought together over the wound. The wound healed by first intention, and slight improvement followed, which was only temporary, however, and the condition gradually fell back to what it was before operation, where it remained stationary.[2]

[1] N. Y. Medical Journal, June 2, 1888, p. 599.
[2] Lancet, July 14, 1888, p. 64.

Dr. Judson formulates a general rule which may serve as a guide in the treatment of Potts' disease by rigid apparatus, especially in all forms of the Taylor brace. The rule reads: "The apparatus may be considered as having reached the limit of its efficiency if it makes the greatest possible pressure on the projection compatible with the comfort and integrity of the skin."[3]

Dr. Sayre tells again the story of the first application of the plaster jacket, and again claims for it advantages over any other form of apparatus, without however, contributing anything new to the subject; one useful suggestion, however, is that his wire cuirass and jury mast can be used in children who are disabled by the disease, securing at once fixation and any desired degree of extension to the diseased column.[4]

LATERAL CURVATURE.

A new apparatus is described by Mr. Scudder, which seems likely to prove useful in recording the amount of deformity present in cases of lateral curvature. It is a modification of the pantograph, by which it is possible to reproduce on a much smaller scale the lateral curve of the back, along the spinous processes, the antero-posterior curve of the back, the outline of the shoulders and trunk, and the amount of rotation of the ribs. The apparatus is simple and easily understood, and the article is well illustrated by cuts giving an idea of its use.[5]

Ketch, in an article on scoliosis, again calls attention to the prevalence of the deformity in young children, and speaks of the importance of at once attacking it by suitable treatment. Where rotation in any marked degree has appeared, there is in his opinion no means on which we can depend to overcome it. Sometimes it disappears, but the surgeon cannot count upon its doing so, and for these reasons he lays the greater importance upon the question of prophylaxis.[6]

WRY NECK.

Robinson describes a new instrument for the treatment of torticollis by elastic traction. A cap with chin piece is buckled upon the head. A chest piece (like a leather jacket) encircles the body and furnishes the counter point from which to pull upon the head — and three elastic straps can be attached to pull in any one of three directions. From the cut the apparatus appears very clumsy.[7]

HIP DISEASE.

In a paper recently published, Dr. Ridlon attacks the American method of treating hip disease, namely, by an extension splint while the child is going about, and advocates a return to the old method of keeping the children in bed during the acute stage and providing them with the practically complete fixation afforded by the Thomas splint.

The American method of to-day he claims to be a direct outgrowth of the Davis idea of providing "motion without friction" obtained by means of a "portative apparatus," so far as the theory of the method goes. In practice too he believes that most modern orthopedic surgeons hold to this theory and treat cases upon this principle.

As regards the results of treatment by the American method, Dr. Ridlon thinks that they "leave much to be desired." His own method would be rest in bed until the muscular spasm subsides, and then locomotion with a Thomas splint worn continuously; and he adds: "There is much evidence that traction can be dispensed with in all cases provided fixation and removal of superincumbent weight be efficient."[8]

HIP DISEASE WITH PERIPHERAL NEURITIS AND EPILEPSY.

Mr. Donaldson records the case of a boy fifteen years old who had had hip disease for three years, and who presented, when seen by the writer, signs of peripheral neuritis of both sides, namely, dry, scaly skin, hyperæsthesia, and loss of extensor power in the feet muscles. The neuritis of the diseased side undoubtedly took its origin in its nearness to a suppurating joint, as pointed out by Gowers; and such irritative nerve lesions are apt to be followed by trophic changes in the skin, as in this case. The peripheral irritation had moreover resulted in epileptic attacks shortly before his death, which was due to exhaustion. There was no autopsy.[9]

FLAT FOOT.

Dr. Whitman publishes some observations made in forty-five cases of flat foot, especially with regard to etiology and treatment. After a careful description of the various symptoms and physical signs of the condition, he considers the various theories which strive to explain its etiology, namely, the theories of muscular weakness or paralysis, of lax ligaments, of high heels, and of congenital osseous malformation; and he concludes that each theory probably applies to a certain group of the cases, but should not be taken as explaining all by any means. And in general he would formulate the cause as "a disproportion between the weight the foot is called upon to bear and the ability of the muscles and ligaments to sustain it, a simple breaking down from overwork."

The treatment which he advocates is the application of a light steel plate, slightly elastic, which reaches from just behind the ball of the great toe to just in front of the bearing point of the heel on the inner surface of the foot; it should run up just above the head of the astragalus, which carries it nearly to the internal malleolus, and it runs under the sole of the foot to the outer border just behind the fifth metatarsal. The plate must be fitted over a cast of the foot taken with the foot in a restored position. By this means, when weight is put on the properly shaped plate, not only is the arch of the foot held up, but the inner flange of the plate acts as a lever pressing up against the sustentaculum tali and the tuberosity of the scaphoid.[10]

KNOCK KNEE.

Davy analyzes sixty-four operations for genu valgum by Ogston's method, all of which were successful and without mishap of any sort. In the forty-two patients operated the age varied between two and thirty years. The width, measured between

[3] N. Y. Medical Journal, Sept. 22, 1888.
[4] N. Y. Medical Journal, June 16, 1888.
[5] C. L. Scudder. N. Y. Medical Journal, May 19, 1888, p. 543.
[6] Samuel Ketch. N. Y. Medical Journal, May 19, 1888.
[7] Lancet, March 31, 1888, p. 631.
[8] Rest in the Treatment of Chronic Joint Disease. Medical Record, Sept. 15, 1888.
[9] Brit. Medical Journal, May 12, 1888, p. 1006.
[10] Royal Whitman. Boston Med. and Surg. Journal, June 21, 1888.

the malleoli when the patient lay with the knees together, presented in general a divergence of twelve to eighteen inches, one reaching twenty-two inches. Davy uses a combination saw and tenotome, so that he accomplishes the whole operation with one introduction of the instrument. His conclusion with regard to the operation is that it is a safe and efficient remedy for genu valgum, if properly done. And as necessary precautions he would insist upon antisepsis and after the operation rest to the joint for at least three weeks, when passive movement should be begun. He uses an outside splint to which the leg is firmly bandaged.[11]

Mr. Owen also favors the use of the keyhole saw rather than the chisel and mallet in the performance of these osteotomies as being safer and equally satisfactory, and he also protests against too long-continued an endeavor to straighten knock knee by splints and mechanical appliances, inasmuch as laxity of the knee may result and be a much more serious matter than the original deformity. Redressement forcé, although an unscientific method, he considers a useful adjunct to the mechanical treatment in the bad cases in young children. If it fails, osteotomy of course must be resorted to.[12]

Mr. Ellis, who has written several papers advocating the treatment of flat foot by exercises directed to developing the flexor longus pollicis, now comes forward in a short paper advocating the treatment of knock knee by muscular exercises. His assertion is "that the muscle concerned in raising the body to the full height, and those that draw down the pelvis in opposition to resistance from above, pull the knee towards a straight line between the foot and the pelvis, and that their agency ought to be utilized in correcting knock knee." Beyond this he gives no directions as to how the treatment should be carried out. He has, he says, found this method highly satisfactory.[13]

CLUB FOOT.

Mr. Swan writes advocating the removal of a wedge-shaped piece of bone from the outer border of the foot in cases of neglected and inveterate club foot. He considers congenital club foot as a curable condition if attacked early enough, but in neglected cases, if tenotomy and milder means fail, he would at once do osteotomy; unless the deformity is so severe that the anterior part of the foot is atrophied. In this event he would not advise operation. He has done osteotomy thirty-four times, with excellent results.[14]

Prince (*St. Louis Medical and Surgical Journal*, May) describes an apparatus for the treatment of equino-varus. It consists of a sole-plate, or the sole of the shoe, with an iron plate turned up on either side just back of the toe, and perforated for a joint. From here, attached by a rivet, passes a metallic strap, on each side, parallel with the sole to a point about opposite the malleolus, thence upwards at right angle with the first portion and parallel with the leg, and at the top the two straps are connected by a metallic band across the front of the leg. A leather strap passes across the instep, connecting the two right angles; and another leather strap passes from the top around the back of the leg, drawing the upper end of the lever backward and thus forcing the heel downwards.[15]

OPEN INCISION AND SUPRA-MALLEOLAR OSTEOCLASIS IN CLUB FOOT.

Levy reports excellent results with this method, but considers that after healing of the wound correcting manipulations are essential. He considers that resection of the tarsus in children is unnecessary.[16]

Vincent,[17] after a review of a number of cases of congenital club foot, is of opinion that the results of resection are no better than after bloodless operations, and that the removal of the astragalus and cuboid cripples the foot. In cases with extreme and obstinate inversion he has employed osteoclasis of the femur, of the tibia and fibula above the malleoli, and forcible twisting the limb and fixation of the limb for union with inversion of the foot.

SPINA BIFIDA.

Dr. Evans records a most remarkable case, in which he removed with the knife a spina bifida tumor in a boy six years old. The tumor was cut off by a direct incision (it appears to have been a true spina bifida), a gush of spinal fluid followed, but in spite of severe shock the patient recovered. No antiseptics were used. The sac was double, and one half contained the meninges of the cord, and communicated directly with the spinal canal.[18]

MUSCULAR ATROPHY IN AFFECTIONS OF THE JOINTS.

Strümpell reports an observation of muscular atrophy in the muscles surrounding the shoulder joint, accompanied by temporary paralysis, in a case of acute rheumatism. He considers that in joint affections this condition of the muscles is not due to the inaction of the muscles, but to a local affection of the adjacent muscle sympathetic to the disease of the joint.[19]

ARTHRECTOMY AND RESECTIONS OF THE KNEE JOINT.

Sendler reports a number of cures of these joints with the restoration of motion. Where motion is to be hoped for, a cross incision is not desirable, and the muscular and ligamentous system for extension is interfered with. In these instances, the straight incisions are preferable.

Sendler reports three cases of arthrectomy, with the establishment of motion, in patients of the ages of two and one-half, twenty-two, and eight years of age."[20]

RESECTION OF THE KNEE JOINT.

Mugnai reports eight cases from the clinic of Prof. Durante, of Rome, and recommends a method of fixation after excision, using the patella, which is nailed to the refreshed tuberosity of the tibia, in addition to the use of splints. He concludes that: 1st, not all cases of fungous disease of the joint are tubercular; 2nd, the surgical treatment is preferable to the palliative; 3d, the shortening in

[11] Lancet, May 5, 1888, p. 870.
[12] Edmund Owen. Practitioner, April, 1888.
[13] British Medical Journal, June 30, 1888, p. 1377.
[14] Dublin Journal Med. Sci., Sept., 1888.
[15] Medical Analectic, N. Y., vol. vi. No. 36, p. 425.
[16] Centralblatt f. orthop. Chirurgie und Mechanik, May, 1888.
[17] Centralblatt f. Chirurgie, No. 24, 1888.
[18] N. Y. Medical Journal, August 25, 1888, p. 205.
[19] Munchener Medical Wochenschr., 1888, No. 13.
[20] Deutsche Zeitschrift f. Chirurgie, Bd. xxvii. p. 307.

moderate resection rarely exceeds five c.m.; 4th, an appliance is to be used for the few months following the operation.[21]

ORTHOPEDIC RESECTIONS.

Mollière believes that a large number of cases hitherto demanding resection for deformity may now be corrected by osteoclasis since the introduction of Robin's osteoclast, which breaks with accuracy. In club foot, osteoclasis of the tarsus or supra-malleolar osteoclasis is preferred to resection. In genu varum and valgum, osteoclasis is greatly to be preferred to resection. He reports one hundred cases without any accident. In cases of anchylosis in faulty position, Mollière considers that osteoclasis gives better results, except in the case of the elbow.

In opposition to the view of Mollière, Ollier claims that the osteoclast can never be as exact as is desirable. In old contraction at the hip joint, Ollier prefers subtrochantric osteotomy, and rejects resection. In anchylosis of the knee in a contracted position, Ollier prefers wedge-shaped osteotomy.[22]

THE TREATMENT OF TUBERCULAR DISEASE OF THE KNEE JOINT BY ARTHRECTOMY.

Mr. Pollard has recently operated upon nine cases of tumor albus by this method. The patients were boys ranging in age between three and seven years, and in all the disease was advanced enough to warrant radical treatment. One case died of septic or iodoform poisoning, and one has recurrence in the scar, as well as a new focus of disease in the spine. The other patients, at the end of a few months, have serviceable limbs, although they are obliged to wear Thomas knee-splints, because when artificial support is left off the knees tend to flex. The incision made in six cases was a curved incision severing the ligamentum patellæ. In the others, the H-shaped incision dividing the patella, which Mr. Pollard thinks gives a firmer union, when once united, than ligamentous union does. So far as possible, the wounds were allowed to heal under one dressing.[23]

TUBERCULAR JOINT DISEASE AND ITS TREATMENT BY OPERATION.

Mr. Barker, in three lectures delivered at the Royal College of Surgeons, gives the most complete account yet published of the experiments which have led to the identification of the great mass of chronic joint disease as a tuberculous affection. The inoculation experiments with tuberculous products, and the generalization of tuberculosis from a local focus, are considered in their bearing on the establishment of the identity of scrofula and tuberculosis. The reason why the joints are so often affected, and especially the epiphyseal junction is so often the seat of the primary focus, are considered; and he calls attention to the danger that a small and local disease will suppurate and become generalized. With regard to this question of operation in general, Mr. Barker's view would be that "as long as there is no distinct evidence of caseation in tubercular joints, so long may we be content to wait while treating them by other means." And so soon as caseation is commencing and advancing, Mr. Barker would advocate operation. He realizes with regret that this is not yet the accepted rule. The third lecture is taken up with an account of the best methods of operating upon the hip and the knee.[24]

FIBROUS ANCHYLOSIS OF ELBOW.

Weigel describes an apparatus which he has invented for overcoming fibrous anchylosis of the elbow by the use of elastic tension. The apparatus produces not only extension, but at the same time rotation. It is, however, impossible to describe it without the use of figures.[25]

SUPPURATION AFTER BRISEMENT FORCE.

Müller reports such an accident occurring in the straightening of the deformity following an acute osteomyelitis at the hip in a boy of twelve. The disease became extensive, and it became necessary to excise the joint, which was done successfully.[26]

CHRONIC LUXATION OF THE JOINT.

Albert advocates a plan for the treatment of congenital dislocation of the hip-joint, based on the successful treatment of a case of lax shoulder-joint which incapacitated the patient by constant tendency to luxation. Albert opened the joint, removed the cartilaginous surface of the bones by means of a chisel, and sewed the bones together with kangaroo tendon. The result was a cure of the luxation but an anchylosed joint.

Albert promises the report in future of a case of congenital dislocation of the hip-joint treated in the same way.[27]

SYPHILITIC AFFECTIONS OF THE JOINTS.

Monastirskji (*Centralblatt für Chirurgie, No.* 32, p. 582), basing his opinion on a number of anatomical specimens, the results of autopsies as well as operative cases, thinks that syphilitic diseases of the joint are often mistaken for tubercular. He thinks that gummata may present themselves in a microscopic and diffuse form, as well as a macroscopic mass. Gummata may be found in the subsynovial tissue, in fibrous tissue of the ligament or in the bone.

A diagnosis of syphilitic disease of the joint is a difficult one unless other evidences of syphilitic disease are present. Characteristic however, are the following symptoms: extreme pain accompanied by good motion at the joint, and a peculiar grating at the joint on motion. If the gummata have not emptied their degenerative products into the cavity of the joint, recovery with good motion may follow antisyphilitic treatment, even in old people.

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[22] Centralblatt f. Chirurgie, No. 24, 1888.
[23] British Medical Journal, June 16 and 23, 1888.
[24] British Medical Journal, June 9, 16, and 23, 1888.
[25] N. Y. Medical Journal, June 16, 1888.
[26] Centralblatt f. Chirurgie, No. 21, 1888, p. 393.
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Therapeutical Memorandum.

EXPERIENCE WITH STROPHANTHUS IN HEART DISEASE.

BY WM. DEVINE, M. D.

My attention was first called to this drug last January, and since that time I have used it in twenty cases of heart disease, organic and functional. Although rather sceptical regarding new drugs, I have found its action in certain cases of heart disease beneficial. No digestive trouble or cumulative effects have been noticed, even where it has been used for two or three months. Of course it will require a more extended use of the drug to demonstrate what advantages it may have over digitalis and other heart remedies. I have written these notes with the object of encouraging others to try it.

I will give a brief account of a few of the most important cases, which remained under observation several months.

Case 1. Lady, æt. fifty-five, suffering with mitral disease of heart (stenosis). January, 1887, was taken ill. When I first saw her she was in a critical condition. Pulse 140, weak, irregular, and intermittent. Great dyspnœa. Physical examination revealed pulmonary œdema and anasarca. During the first week I tried tinct. digitalis, tinct. nucis vom., ammon carb., and stimulants, but could see no improvement. Then gave tinct. strophanthus, gtt. 5 every four hours; in forty-eight hours noticed marked improvement, then increased to gtt. 10 four times daily. She made a good recovery in about two weeks. She continued with tinct. stroph.; taking gtts. 5 four times daily, for one month. Called to see her Sept. 12. Pulse 160; weak, irregular, and intermittent, great dyspnœa, œdema of ankles. Commenced with tinct. stroph., gtt. 8 t.i.d., and increased up to gtt. 12 t.i.d. Œdema began to disappear on third day, pulse grew stronger and more regular, dyspnœa relieved. She has continued to take gtt. 12 t.i.d. up to the present time, and her pulse is now stronger and more regular than it has been since she came under my observation.

Case 2. J. C., æt. 60. Has been subject to chronic bronchitis for several years. Has had occasional attacks of asthma. Taken sick in May with an attack of acute bronchitis. The most noticeable feature of his illness was a remarkable cardiac weakness. In the third week, under the influence of enfeebled heart action, pulmonary hypostasis developed. To combat this heart weakness tinct. digitalis, tinct. nucis vom., quin., wine of coca, and stimulants were tried, but without avail. Then commenced with tinct. strophanthus, gtt. 6, and gradually increased to gtt. 10. Pulse gradually grew stronger under its influence, hypostasis disappeared in about two weeks, and he was entirely well in three weeks, and remains so at the present time.

Case 3. A. C., a corpulent woman of sedentary habits, had severe attack of acute articular rheumatism with cardiac complications last February. Recovered from rheumatism in two months, but had dyspnœa on slight exertion, pulse weak, intermittent and irregular, frequent dizzy spells. No valvular lesion could be detected, but symptoms made me suspicious of fatty degeneration. Gave her tinct. digitalis in small dose with tinct. ferri chloridi; also gave quinine, nux vomica, etc., but could notice no real improvement. September 1 commenced with strophanthus, gtt. 4 t.i.d.; gradually increased to gtt. 8 t.i.d.

There is a marked improvement in her general condition (October 1). Her wind is much better, pulse stronger and regular, 84 per min. I shall continue with small doses unless I see something to contra-indicate it.

Case 4. C. G., æt. 26, policeman. Father died of heart disease. First came under observation in April. Has had several attacks of palpitation the last year. These attacks would generally last several days, unless he remained absolutely quiet. No treatment gave any permanent relief. He was addicted to the moderate use of tobacco, otherwise his habits were good. I forbade the use of tobacco in any form. Physical examination revealed no valvular lesion. The continued overaction of the heart had ceased; slight hypertrophy. In his case used various cardiac sedatives, but got no permanent relief; finally, September 1, 1887, commenced with tinct. strophanthus, gtt. 5 t.i.d., and have increased it to gtt. 12. Under this course of treatment the excited pulse gradually subsided, and he has had but one slight attack of palpitation since. I could cite a number of other cases to show the efficacy of this drug in heart disease.

I have used strophanthin in several cases; it is a more reliable method of administering the remedy. The dose is one-hundredth to one-fiftieth of a grain. In urgent cases of heart disease, where quick action of drug is desired, it will be found more efficacious than the tincture of strophanthus. The proper average adult dose of the tincture is gtt 10; it may be increased up to gtt. 20.

Reports of Societies.

THE NEW YORK ACADEMY OF MEDICINE.

STATED meeting, November 1, 1888. DR. J. LEWIS SMITH read a paper on

SUDDEN HEART FAILURE IN DIPHTHERIA: ITS PATHOLOGY AND TREATMENT.

There was no other disease, he said, in which sudden, unforeseen, and fatal attacks of heart-failure occurred so frequently as in diphtheria, and no other disease in which physicians, largely on account of such unexpected attacks, were so frequently deceived in their prognosis. In most cases of this kind death speedily occurred, even when the medical attendant had made a favorable prognosis only a short time previously. Having briefly referred to the symptoms, he quoted, with comments of his own, a number of typical cases occurring in the hospital service of M. de Gassicourt, which he said he had selected on account of the completeness of the latter's records. In some of these the heart-failure occurred early in the course of the disease, and in others during its later stages. M. de Gassicourt met with one recovery to fourteen deaths, and the case which recovered was of special interest from the fact that the heart-failure preceded the palatal and other forms of paralysis, instead of being preceded by them, as is ordinarily the case.

Dr. Smith then went on to discuss the cause of this sudden loss of power in the heart in diphtheria. Having shown that Bouchut and Lagrane's hypothesis that it was due to endocarditis was untenable, he stated that the heart-failure had with more probability been attributed to granulo-fatty degeneration of the muscular fibres of the organ, consequent upon a prolonged and severe attack of diphtheria; and quoted Oertel in support of this theory. Such degenerative changes, if occurring in a considerable proportion of the muscular fibres, would undoubtedly render the contractile power of the heart feeble, and perhaps inadequate. It could, however, be regarded as a cause of the condition in question in a limited number of cases only, since in the majority of instances the loss of power in the heart occurred suddenly, and during convalescence, when degenerative changes were not likely to occur. In most of the recorded cases the contractile power of the organs did not appear to have been notably weakened previously to the attack of heart-failure, as would probably have been the case were degenerative changes in the myocardium the sole or chief cause. Furthermore, in typical cases of sudden heart-failure the microscope sometimes revealed a perfectly healthy myocardium after death.

The accident had also been attributed to cardiac thrombosis; and among the most strenuous advocates of this theory was Dr. Beverley Robinson, whose thesis for the doctorate of medicine in Paris had been devoted to this subject. But, as several writers had pointed out, the heart clots which had been observed were identical in appearance and kind with those found in the heart after death from other diseases, and there was every reason to suppose that they were formed during the death-struggle, and that they are not, consequently, the primary cause of the heart-failure, but secondary to it. In support of this position he quoted De Gassicourt and Sanné.

The theory of deficient innervation, or a true cardiac paralysis, Dr. Smith thought the most tenable hypothesis. It appeared to be applicable to the largest number of cases, and afforded the most satisfactory explanation of those cases in which death occurred during apparent convalescence, when the symptoms were fast disappearing, with the exception of the palatal or other paralysis; as well as the most satisfactory explanation also of the occurrence of those obscure cases in which the *post-mortem* examination shows an apparently healthy state of the heart. The theory of an arrested or deficient innervation of the heart, furthermore, furnished an explanation of the occurrence of the concomitant symptoms, such as vomiting, epigastric pain, and dyspnœa, with an irregular respiration; since the heart derived its innervation from the same source as the lungs and stomach, viz., through the pneumogastric. In classifying the forms of diphtheritic paralysis he felt justified, therefore, in making a distinct class having the designation cardiac paralysis, or, to adopt the French expression, cardio-pulmonary paralysis.

He then proceeded to speak of the etiology of cardiac paralysis. It was, as he had shown, associated with and preceded by other forms of paralysis, with few exceptions, and it was probable that in most cases it had the same pathology and cause. What was true in reference to the cause and nature of palatal and multiple paralyses, and even of abolition of the tendon reflexes, was probably true also of cardiac paralysis. Having spoken of the untenable theory of Gubler, that paralysis of the velum and palate was due to disease of the terminal nerves produced by contiguity or propagation from the inflamed fauces, he stated that Trousseau considered that the real cause of diphtheritic paralysis was the poisoning of the system by the morbific principle which generated the malady, and believed it doubtful whether its mode of action in producing the paralysis would ever be discovered. The microscopic examinations of Charcot, Vulpian, Roger, Damaschino, Buhl, Pierret, Déjeune, Oertel, and others established the fact that the peripheral nerves distributed to paralyzed muscles had, in certain instances at least, undergone degenerative changes. Pathologists had attributed these lesions to a neuritis, and hence the widely accepted theory that the cause of diphtheritic paralysis is a peripheral neuritis. But anatomical changes equally marked had been discovered in the spinal cord, and especially in its gray matter, and in the roots of the spinal nerves; so that in some cases it was a fact that central lesions occurred which were quite as extensive and marked as those in the peripheral nerves.

Dr. Smith's next point was to examine by the light of clinical experience the prevailing theory that diphtheritic paralysis results from anatomical changes peripheral or central, or both, in the nervous system, and to enquire whether it was adequate to explain the paralysis as it ordinarily occurs — whether cardiac paralysis or the other forms. The following were some of the objections to it:—

1. Cases occur in which carefully conducted microscopic examinations reveal an apparently normal state of the nerves supplying the paralyzed part, and of that part of the cerebro-spinal axis from which the nerves arise. Thus, in three cases of typical cardiac paralysis reported by M. de Gassicourt, which had been detailed in the early part of the paper, the pneumogastric (and its branches, examined in one case) appeared normal, and in none of the three was there any lesion sufficient to cause paralysis found in the medulla oblongata, the central organ of innervation of the heart.

2. Palatal paralysis sometimes occurs as early as the second or third day of diphtheria, and loss of the tendon reflexes as early as the first day; and it seems improbable that a peripheral neuritis, or anatomical changes in the cerebro-spinal axis such as to cause paralysis, should occur at so early a date.

3. In its commencement, diphtheritic paralysis often exhibits what Trousseau designates as mutability, suddenly shifting from one group of muscles to another. It would seem impossible that there should be a sudden recovery from the paralysis, and then perhaps on the following day a recurrence of it, if it resulted from degenerative nerve changes, either central or peripheral. A persistent cause should produce a continuous effect.

4. Some of the microscopists who have discovered degenerative changes in the peripheral nerves supplying paralyzed muscles state that, while some nerve-fibres have undergone complete or nearly complete degeneration, others have been affected with only partial degeneration, and still others seem to be intact; a condition which would hardly account for the complete paralysis often met with, as for instance, in the velum palati.

5. It has been alluded to by both Drs. Suss and Wm. H Thomson that diphtheritic paralysis, both motor and sensory, is sometimes limited to the parts supplied by a single branch of a nerve, while all the other branches have their normal function. This fact, of not infrequent occurrence, is not, of course, antagonistic to the theory that peripheral nerve lesions cause the paralysis, but it affords a strong, if not conclusive, argument against the theory that central nerve lesions are the cause.

Notwithstanding these objections, however, when the lesions referred to, whether peripheral or central, were found after death, we naturally inferred that they had a tendency to increase and prolong the paralysis. The present theory relating to the etiology of diphtheria, which was gaining acceptance throughout the world, was that the specific germ of the disease acts only locally upon the surface, and that systemic infection occurs through ptomaines, which are produced upon the surface by the agency of the microbes, and enter the system through the lymphatics and blood-vessels. If this theory were true, we must attribute anatomical changes in the interior of the body, in the peripheral nerves as well as the cerebro-spinal axis, to the agency of ptomaines, and the ptomaine must be the causal agent, acting directly or indirectly, in diphtheritic paralysis. Dr. Wm. H. Thomson, in his recent paper on diphtheritic paralysis, wrote: "It is quite conceivable that a ptomaine may follow upon the changes which the diphtheritic process sets up in the organism, and thus produce all of its characteristic symptoms. The special tendency of diphtheritic inflammation to cause necrotic and gangrenous lesions lends further support to this surmise."

The ptomaines, Dr. Smith said, sprang into existence suddenly and unexpectedly under favoring conditions, as was seen in the cheese or milk ptomaine, tyrotoxicon; and chemistry, brought to the aid of microscopy, might yet reveal the fact that the common cause of diphtheritic paralysis is a chemical agent acting in some respects, in manner though not degree, like curare. Clinical facts appeared to harmonize best with the theory that a ptomaine is the direct cause of the paralysis, especially in cases occurring early and quickly cured; though it would be idle to argue that the marked degenerative peripheral and central nerve lesions which are so frequently present in those who have died with diphtheritic paralysis do not prolong and intensify the paralysis, and are in some instances its primary cause.

As to the treatment of cardiac paralysis, the reader said that it was evident from the nature of the trouble that it must be combated promptly and with the most active remedies. The patient should be kept quiet in bed, with the head low, and alcoholic stimulants administered at once. In sudden seizures hypodermic injections of brandy acted most promptly in sustaining the heart's action. Ammonia, camphor, musk, and electricity were also of service; as well as the predigested beef preparations, peptonized milk, and other concentrated foods designed for those with feeble digestion. If the urgent symptoms were relieved by these measures, such remedies should be employed as were useful in other forms of diphtheritic paralysis. In addition to the beef extracts, concentrated foods, and alcoholic stimulus, iron and quinine, in moderate doses, were indicated. The use of electricity was suggested by the nature of the attack, though some physicians considered it of doubtful efficacy. If there were reason to suspect the presence of lesions in the central nervous system the galvanic current in short sittings had been recommended in preference to the faradic, while in ordinary cases either the direct or induced current might be employed. Strychnia, however, was regarded by good observers as the most efficacious nerve stimulant in the various forms of diphtheritic paralysis, and he referred to the testimony of Henoch, Reinhardt, and Gerasimon in its favor. Still, it was a fact that some physicians of experience state that they have not observed any marked benefit from this agent.

DISCUSSION.

Dr. A. L. Loomis, having mentioned two fatal cases which had occurred in his practice, said that he had always supposed that diphtheritic paralysis and heart-failure were not always dependent on the same cause. In the early stages of diphtheria it had seemed to him that heart-failure was due to the direct action of the poison in the system, whatever that might be; as was no doubt the case in other diseases, especially typhus fever, in which sudden death not infrequently occurred from this cause. On the other hand, he had been inclined to

believe (although it was perhaps an assumption not sufficiently well based on evidence) that when heart-failure occurred in the advanced stages of diphtheria it was due to a peripheral neuritis.

DR. A. CAILLE spoke of the importance of keeping all patients suffering from diphtheria strictly confined to bed, and of giving them sufficient stimulus, for the purpose of counteracting the tendency to heart-failure as far as possible. He also mentioned one case in which fatal heart-failure was apparently brought about by an error in diet.

DR. BEVERLEY ROBINSON said that, so far as he was able to judge, cardiac failure in acute cases, in the majority of instances, was connected with the ante-mortem formation of clots in the heart, especially the right heart, depending on granulo-fatty degeneration of the walls of the organ. When a hospital interne in Paris he had made a large number of autopsies in such cases, and he had never found any lesions of the peripheric nerves. He believed that the condition of the heart to which he referred could be frequently detected during life, if properly looked for. In his experience death did not always occur rapidly; the symptoms of heart-failure often continuing for a considerable time before the fatal termination. After death there would almost invariably be found fibrinous clots, and from their character he believed they were formed ante-mortem, and were to a greater or less extent the direct cause of death.

DR. SEIBERT expressed the opinion that heart-failure occurring in the early stages of diphtheria was due to the direct action of the poison of the disease upon the central nervous system, and that when it developed later on it was due to pathological changes in the cardiac muscle. He related cases, and said that all the patients died from the attempt to make some exertion.

DR. LOOMIS said that Dr. Robinson seemed to think it was the heart-clot that killed; but he himself did not believe it possible to have a clot without antecedent heart-failure. It was the heart-failure that caused death, and the formation of a clot was simply the last act, resulting from the slowing of the blood-flow.

DR. ROBINSON said that his personal observation compelled him to differ from Dr. Loomis as regards the formation of clots; and as he had formerly made a special study of this subject, he felt justified in the views which he held. It was a fact that the heart-clot in diphtheria differed absolutely from every other. It was completely fibrinous and formed in layers; and he thought that there could be no doubt that it existed a long time before death and antedated the cardiac failure.

THE PRESIDENT, DR. A. JACOBI, said it was probable that some of the sudden deaths in diphtheria were due to syncope, the result of anæmia of the brain brought about by exertion, as was not infrequently the case in pneumonia. Fatty degeneration of the heart, when present, was always a sufficient cause of death at any time. There was one peculiar condition that might be mistaken for heart-failure in the later stages of diphtheria, viz., paralysis of the muscles of respiration. It usually followed the other forms of paralysis, and was characterized by shallow respiration, with a good deal of resulting dyspnœa and rapidity of the heart's action. In such cases electricity in short sittings and strychnia in full doses were called for. The strychnia should be given hypodermically,—the one-hundredth of a grain every one, two, three, four, or five hours according to circumstances.

It was impossible to say which of our diphtheritic patients was going to die of heart-failure; but we did know that in diphtheria there was such a tendency, and hence it was our duty in every instance to do all in our power to guard against such an accident. The indications were to save the strength of the patient by feeding and tonics, and especially to fortify the heart by means of alcohol and such agents as digitalis, sparteine, and strophanthus. In every case of diphtheria we had to deal with sepsis, and alcohol was therefore of the highest possible advantage. He believed that no case of this disease could be injured by alcohol; and even the most courageous practitioners often erred in giving too little of this invaluable agent. If the choice were given him between alcohol and all other remedies in diphtheria, he would unhesitatingly select the former as offering the best chance to the patient. In brief, then, the indications for the prevention of heart-failure were to save the strength, combat sepsis, and sustain the heart.

DR. SMITH, in closing the discussion, said that since the stomach and lungs, as well as the heart, were implicated, the inference was that the cause of the trouble was some affection of the nerve supplying these three organs, the pneumogastric. It was a fact that a certain proportion of those attacked with heart-failure recovered, and that in some of those who died there was for a time an amelioration of the symptoms; and it seemed to him that this would not be possible if the trouble were due to heart-clot, which would undoubtedly be a permanent condition, unaffected by any treatment that might be adopted. It was also a fact that paralysis of some form almost invariably preceded the heart-failure, and this would seem to indicate that the latter was due to the same cause as the paralysis.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON NEUROLOGY.

STATED meeting, October 12, 1888. DR. C. A. HERTER read a paper on

THE THERAPEUTIC USES OF HYPNOTISM.

The employment of hypnotism was attended with difficulty, he said, on account of the prejudices existing against it in the minds of the profession, as well as the public at large. It was indeed perhaps impossible at the present time to arrive at any positive conclusions as to its proper place in medicine. Hypnosis resembled ordinary sleep, with the element of "suggestion" added. Suggestion was effective, however, in the waking state also, as shown in the so-called Christian Science and faith cure, as well as to some extent as regards homœopathy.

Having given Lieboldt's classification of hypnotic trance in six divisions, according to the degree of intensity of the hypnosis, he said that this was at variance with the well-known division of Charcot into catalepsy, lethargy, and somnambulism. Char-

cot's cases, he thought, should not be taken as a basis of conclusions, because they were as a rule trained subjects. He had never seen the neuro-muscular excitability so much spoken of occur spontaneously, although he had found that it could be readily developed by suggestion. He then described the proper method of producing hypnosis, as advocated by Lieboldt and Bernheim. The operator should first secure the confidence of the patient, and then tell him to look him steadily in the eye and think of nothing but going to sleep. The process could be materially aided by suggestive remarks addressed to the patient, and by placing two fingers upon the face; the fingers being finally pressed gently upon the eye-lids. In order to obtain good results it was necessary to watch the patient very closely, and to suit the words to the symptoms of sleep as they developed themselves. The *rationale* was very simple. Verbal suggestion in the waking state made the patient believe that he was falling asleep, and the method closely resembled the natural process. It had been found that men and women were about equally susceptible to hypnotism, the preponderance being only one per cent. in favor of the latter.

In speaking of some of the conditions in which it had been employed as a therapeutic agent, Dr. Herter first referred to hysteria, and stated that notwithstanding so much had been written on hypnotism in this connection, the special indications for resorting to it were still far from clear. It was probable that hypnotic suggestion might be of more or less service in all forms of hysteria; but, as a rule, recovery, if secured, was not permanent. In old cases of contractures due to this cause, it was indeed often very difficult to get any appreciable result. The effect on hysterical amblyopia and amaurosis was extremely interesting, and in many cases a very marked improvement in vision had attended the persevering use of hypnotism. Of the motor paralyses, none were more benefited by it than abductor paralysis of the larynx. In hysterical convulsions the number and severity of the attacks were greatly diminished. He said that one need never be discouraged by failure to secure hypnosis at the first trial in any case of hysteria. The prospect of a cure would depend on various circumstances, but at all events hypnotism would in many instances serve as a useful adjunct to other treatment. Not much was to be hoped from it in hystero-epilepsy. He had personally employed it in two cases, but with no satisfactory results. The prospect was not encouraging in epilepsy either.

In several cases of chorea the effect on the movements was rapid and marked, and with perseverance a cure might sometimes be made in this affection. A number of daily sittings was generally required, and in some cases it was necessary to keep these up for months. Still, in any case of supposed cure there would always arise the question whether the disease had not simply run its course, and ended spontaneously. There was the most ground for hope in those cases in which the movements were general; and the previous existence of rheumatism and endocarditis did not seem to render the chances of relief less favorable. In insanity the results from hypnotic suggestion had not for the most part been satisfactory. He had seen it tried quite extensively at Zurich, but had never observed any benefit from it that was not evanescent.

In delirium tremens its effect was often excellent, and quiet, restful sleep was sometimes secured by it in cases in which the same result could only have been obtained by the use of drugs in doses so large as to be dangerous. Alcoholism constituted one of the most hopeful fields for its employment. The *séances* should be given twice daily for several months, and in many cases the patient became inspired by suggestion with a complete disgust for drink. The same was true also of the opium, chloral, cocaine, and tobacco habits; but in all these cases surveillance in an asylum was, of course, an essential feature of the treatment.

Masturbation and other bad habits had been cured by hypnotism; and perhaps no more satisfactory results from its use had ever been observed than in incontinence of urine in children. Lieboldt had employed it in seventy-seven cases, with a very large percentage of cures. The average age of the patients was seven years; and in two of those cured there was incontinence of fæces in addition to the enuresis. The results obtained were the more gratifying from the fact that many of the cases had resisted all the ordinary methods of treatment. In various rheumatic affections Bernheim and others had reported fairly satisfactory results. Among these were lumbago, and subacute, chronic, and gonorrhœal rheumatism. In chronic joint cases it was claimed that not only was the pain diminished, but that the nutrition of the joint was actually improved by the treatment. Dr. Herter thought it was doubtful, however, whether any real effect upon the joint was produced. In neuralgia much benefit could be expected in recent cases, but if the trouble was chronic there was less chance of success. In some old cases of sciatica, however, good results had been claimed, and at all events the method was often of service in securing sleep, even if no permanent benefit could be looked for. In functional headaches it was of decided advantage; and in certain instances of migraine he had been successful in mitigating and cutting short the attacks by its aid.

At first sight it might seem that such an agency as this could have no effect upon a function like that of menstruation; but it had been practically demonstrated that in some cases not only the interval between the periods, but the length of the periods themselves, could be absolutely controlled by it. The number of individuals in which such results as these could be looked for was, however, comparatively few.

As to the employment of hypnotism in surgery as a substitute for the ordinary anæsthetics, the number of patients, with the exception perhaps of children, in whom it was available for major operations was, no doubt, small, especially as the anticipation of having an operation performed was extremely apt to interfere with the success of the hypnosis. On the whole, its employment in this field was not to be recommended, except in cases where for any reason the use of anæsthetics was contra-indicated. He had, however, seen a molar removed under its influence without the patient's suffering any pain or having any remembrance afterwards of the extraction of the tooth.

Having spoken at some length of the use of hypnotism in parturition, Dr. Herter said that we were justified in arriving at the following conclusions regarding the subject: —

(1) It induces sleep, and is in nowise prejudicial to the efficacy of the uterine contractions.

(2) It has no tendency to produce *post partum* hemorrhage, and is unattended by any other bad results.

(3) It is in no way comparable to chloroform in labor, and should only be used in those rare cases where the usual anæsthetics are contra-indicated.

In insomnia it could often be employed with good results, but it sometimes required months of persevering treatment to effect a cure. In cases where drugs had been resorted to, it could be used in addition to the habitual remedy; the dose of the latter being gradually diminished, and perhaps finally replaced by a placebo. Among the other affections in which it had been tried were writer's cramp and paralysis agitans.

Among the objections which had been raised to the employment of hypnotism were the following: —

(1) It tends in certain susceptible subjects to produce temporary mental alienation; some individuals thus developing hallucinations during wakefulness.

(2) Some individuals fall asleep spontaneously, showing a tendency to auto-hypnotism.

(3) Some can be readily put to sleep by any one who chooses to do so.

The bad results referred to Dr. Herter thought could for the most part be entirely antagonized by suggestion. In conclusion he proposed the following general rules for those desiring to practise suggestive therapeutics:—

(1) Never hypnotize any subject without first obtaining his or her formal consent.

(2) Always hypnotize in the presence of a third person.

(3) Never give any suggestions other than those which are necessary for the patient's improvement in health.

Public exhibitions of hypnotism he thought should be prohibited by law, and the use of this agency confined exclusively to the medical profession. One advantage connected with its employment in medicine was that it does not lose its effect by repetition. On the contrary, the subject became more and more readily influenced by it the oftener he tried it. From what had been said it could be seen, therefore, that suggestive therapeutics was not a delusion; and he had no doubt that before many years it would be assigned a regular place in medical science. At the conclusion of his paper Dr. Herter exhibited on a female subject the method of inducing hypnosis.

The Chairman of the Section, DR. W. R. BIRDSALL, read the

REPORT OF A CASE OF TREMOR TREATED BY HYPNOTIC SUGGESTION.

The tremor was of recent origin, and completely incapacitated the patient, who was a young man of twenty-one, from work. It affected the right forearm, and there was constant flexion and extension of the member; the movement being so violent as to shake the entire body. Hypnotism was readily induced, the arm becoming perfectly quiet under its influence, and he was told that when he awoke the tremor would not return. When he first came out of the trance there was no motion, but it soon came back to a slight extent. He was told, however, that it would disappear altogether before long, and requested to return for a second treatment the following day. The treatment was repeated several times, and after the fifth *séance* the cure was complete. Some time afterward there was a slight return of the trouble, but it was readily removed by the same treatment. The patient had been lost sight of, having removed from the city. Dr. Birdsall said, in concluding his report of the case, which he considered to be of an hysterical nature, that he thought we were not justified in wholly discarding a method of treatment which had already shown itself useful in many nervous troubles; though, of course, he did not mean to contend that we should by any means attempt to treat all classes of cases by hypnotism, and thus place ourselves on a level with the faith healers and Christian Science people.

DR. OSGOOD MASON read a paper on

SIX CASES OF TREATMENT WITH ANIMAL MAGNETISM.

He said, in commencing, that as the term hypnotism was not altogether satisfactory, and as he had been in the habit of employing that of animal magnetism before the latter came into vogue, he preferred to still retain it, in the absence of any better designation. Among the cases described, the first of which was treated eighteen years ago, were cases of hysterical paralysis, epilepsy, and rheumatism, and the results obtained by him were quite favorable. The deductions which Dr. Mason said he had derived from these and other cases were as follows—

(1) Animal magnetism is of decided value as a therapeutic agent.

(2) Sleep is not always necessary for the production of the greatest benefit.

(3) It has the effect of equalizing the circulation.

(4) It also regulates and equalizes nervous action.

Corollary: The equalization of the circulation is the result of the equalization of nervous action.

The SECRETARY then read a paper on

THE THERAPEUTIC VALUE OF HYPNOTISM,

by MR COREY, of Boston, Chairman of the Committee on Hypnotism of the American Society for Psychical Research, who had been present during the early part of the meeting, but had been obliged to leave in order to catch a train. In the course of it he spoke particularly of the results obtained by M. Voisin in certain cases of insanity. He also referred to many of the affections spoken of in Dr. Herter's paper, and expressed the opinion that hypnotism was destined to prove of great service in properly selected cases in medical practice. In the latter part of it he dwelt at some length upon the medico-legal aspect of the subject, and spoke of the danger, that susceptible individuals might be caused by the unscrupulous to commit criminal acts while in a state of hypnotic trance.

DISCUSSION.

Dr. Kremer said that he had employed hypnotism in six or eight cases of a nuerasthenic or hysterical character, and three of these he related as presenting points of special interest. In one case he had had considerable difficulty in arousing the patient from the hypnotic sleep, and in several instances he had found that the treatment gave rise to headache and malaise. On the whole, his experience with the method had not been very favorable.

Dr. C. L. Dana mentioned the case of a child of neurotic family, who was suffering from vomiting and intense headache, in which, after other remedies had proved inefficient, complete recovery was secured by hypnosis repeated twice. After referring to two other cases in his experience, he said that it was something of a coincidence that at the time when the convention of the "Christian Alliance," composed of those who believed in faith healing, was treating the subject of suggestive therapeutics empirically, it should be discussed at the Academy of Medicine from a rational point of view. He said that five or six years ago, when the method of Bray was in vogue, he had paid considerable attention to hypnotism, and he had known of one subject, a young girl of nervous temperament, who was affected with convulsions in consequence of the treatment. While the method of Bernheim and Lieboldt was much less objectionable, he did not think the practical applicatioi of hypnotism was of very wide range. There were comparatively few individuals who were suitable subjects for treatment by it; and there were not many physicians who were willing to devote the time necessarily required by it. Dr. Dana thought the so-called faith cure and Christian Science should be prohibited by law, and expressed the opinion that it was better for a person to remain ill rather than be cured by such agencies, which tended to produce paresis of the will and eventually bring about a certain amount of volitional degradation.

Dr. Herter said, in reply to Dr. Kremer, that he had never found any difficulty in arousing a patient from the hypnotic sleep, although he had seen the method tried in over one hundred subjects. The only exception was in an individual who had been in a spontaneous condition of trance previously. He did not think this a valid objection to hypnotism, and as to the headache and malaise referred to, he believed these could always be prevented by suggestion before allowing the patient to waken. He had never noticed any depressing tendency about the treatment. He agreed with Dr. Dana as to the bad effects of Bray's method, with the bright light, which had been known to give rise to epilepsy and convulsions; but said he was not aware of any evil results having been noted from the method now employed. It was comparatively easy to hypnotize a considerable portion of people, although he thought that in the higher classes of society it was no doubt more difficult to get subjects sufficiently passive than was the case in individuals of the middle and lower classes.

— In China insanity is not accepted as a defence in charges of murder. The insane person is beheaded as if responsible for his act.

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THE MORTALITY OF PNEUMONIA.

This subject has been attracting a good deal of attention during the past year, and some of those who have discussed it have been disposed to take the ground that the rate of mortality has greatly increased within the last fifty years, and that such increase is due in no small degree to unsuitable treatment.

Dr. Henry Hartshorne read a paper before the College of Physicians of Philadelphia, in February, on the "Past and Present Mortality and Treatment of Pneumonia,"[1] in which the average mortality of pneumonia during the second quarter of this century is "safely and fairly" estimated, from various statistical sources, at 8.33 per cent., a mortality which is favorably compared with that of 16 to 20 per cent., as given in the returns of the Collective Investigation Committee of the British Medical Association.[2] In the Pennsylvania hospital, in the three years 1845–46–47, the mortality from pneumonia was 6.25 per cent.; in the years 1865–66–67, 18.50 per cent.; in 1884–85–86, 31 per cent. According to Dr. A. L. Loomis,[3] the average ratio of deaths from pneumonia to those from all diseases together, in New York, was 15.2 per cent. greater between 1859 and 1877 than between 1840 and 1858. From these figures the writer deduces a demonstration of the large increase in the proportion of deaths from pneumonia over what it was thirty, forty, and fifty years ago. Moreover, from a comparison of these and other figures with the modes of treatment prevalent at various periods the conclusion is drawn that there is reason for the judgment that the now current "working theory" of the treatment of pneumonia and allied affections, by early and continued

[1] Abstract, Medical News, April 7, 1888.
[2] The Collective Investigation Record, vol. ii., July, 1884.
[3] American System Practical Medicine, Croupous Pneumonia.

stimulation and narcotism, is not supported by the facts concerning the results of that treatment, as compared with those of the *moderate, early,* sedative and eliminative practice of forty and fifty years ago.

According to Dr. Gouverneur M. Smith,[4] New York experience corroborates the statistics of Philadelphia. From a table furnished him showing the number of cases, the number of deaths and death-rate from pneumonia, occurring in the New York hospital for a period extending from the year 1810 to 1887, divided into decades, it appears that the lowest mortality occurred between the years 1820 and 1830. The mortality has been rising, and during the last decade it reached its acme — considerably over double the earlier percentage. Dr. Smith thinks that, from such sources of inference as are at hand, and from observation, it may be regarded as an accepted fact that the death-rate from pneumonia is much greater at present than it has been hitherto. His conclusion is that science and pneumonia have ever been at loggerheads, and that the latter is vanquishing its more pretentious foe.

On the other hand, the *Medical News* takes the ground that, although a study of the history of the treatment of pneumonia makes one almost despair of the future of therapeutics — so impossible does it seem to arrive at reliable conclusions regarding the use of medicines — yet our feelings of despair vanish when we compare the figures of to-day, bad as they appear, with those of the *first* quarter of this century; for we then see that there has been in the treatment of pneumonia, as in that of fevers, a steady, progressive enlightenment. The comparison of the *News*, it will be noticed, is made with the first quarter of the century, and that of Dr. Hartshorne with the second and third quarters.

The sub-committee of the Collective Investigation Committee, commenting on the figures presented in regard to mortality in pneumonia, reminds us that it is evident from the statistics of consecutive years that the death-rate of pneumonia varies very widely from year to year. In 1875 the mortality from pneumonia at the London hospital was not quite 24 per cent. in the year following it was 39 per cent. Of forty cases admitted into Middlesex Hospital in 1871, fourteen died; while of the same number admitted in 1873, only five died. At the Westminster hospital the death-rate varies from 10.6 per cent. to nearly 23 per cent. The aggregate mortality, however, the sub-committee thinks fairly represents the present death-rate of acute pneumonia in England, and suggests a comparison of these figures with the old statistics of Lewis, Chomel, and Andral, showing a mortality varying from 30 to 55 per cent., with Bouilliard's "jugelant" practice with an asserted death-rate of about 12 per cent., and with the late Dr. Hughes Bennett's more recent series of one hundred and twenty-nine cases, with only four deaths.

The latest contribution to this side of the question is from Dr. William Osler.[6] Dr. Osler does not find that the statistics of the large hospitals show any decided increase in the rate of mortality from pneumonia. He has taken the figures of three representative institutions — the Montreal general hospital in the north; the Pennsylvania hospital in our Middle States; and the New Orleans Charité in the south. At Montreal the statistics are available since 1853, and give the following results: in the decade 1853-63 a mortality of 16.2 per cent.; 1863-73, 16.1 per cent.; decade ending 1883, 23.7 per cent.; and in the years 1883-87, 20.3 per cent.; a total of 1012 cases, with 206 deaths, equal to 20.4 per cent. The total number of cases admitted to this hospital, which has not been materially enlarged, has increased with each decade; in 1873–83 as many were admitted as in the previous twenty years. Taking the statistics of four periods, according to the method of Dr. Hartshorne, the figures do not indicate a regularly progressive increase in the mortality. In 1853-54-55 there was a death-rate of 24.3 per cent.; 1863-64-65, 12 per cent.; 1873-74-75, 29.1 per cent.; 1883-84-85, 16.1 per cent.

The statistics of the Charité hospital of New Orleans date from 1830. In the five decades from 1830 to 1880 the death-rates have been respectively as follows: 44.6 per cent., 35.3, 32.2, 43.9, 40.2. In a total of 3969 cases there were 1509 deaths,—a percentage of 38.01.

As illustrative of the beautiful elasticity of figures, and as showing that the mortality at the Pennsylvania hospital has been, if anything, reduced, Dr. Osler parallels the selected periods of three years in the fourth, sixth, and eighth decades of the hospital records, previously quoted from Dr. Hartshorne's paper, by four other periods of three years in *successive* decades, as follows: 1848–49–50, percentage of mortality 37.9; 1858–59–60, 21.2 per cent.; 1868–69–70, 22.8 per cent.; 1878–79–80, 32.7 per cent. In a total of 704 cases since 1845, the mortality has been 29.1 per cent. Precisely the same death-rate is given for the past thirteen years for the Boston City Hospital, where a very large number of pneumonias enter, and where out of a total of 1443 cases there were 421 deaths.

[4] New York Medical Record, October 20th, 1888.
[5] Editorial, December 11th, 1886.
[6] University Medical Magazine, Nov., 1888.

Other statistics adduced coincide in a general way with those which we have quoted.

For ten years past Dr. Osler says he has practised free bleeding to the amount of from twenty to twenty-five ounces in adults in cases where he thought it might be indicated, and yet he has to confess to disappointment in his results; he has seen but one case recover after bleeding, out of twelve or fifteen, and his cases of bleeding in the late stages have been uniformly fatal.

We very much doubt whether the mortality rate from pneumonia can be fairly shown to have progressively increased during the last fifty, forty, or thirty years, and we are decidedly of the opinion that the treatment of to-day is more rational and better calculated to aid the natural tendency to recovery in uncomplicated cases — which after all said and done is the hopeful feature of the disease — than that of fifty years ago. In most cases of pneumonia antipyretics are calculated to do more harm than good; and common sense must govern in the use of cardiac and respiratory stimulants as well as in the application of antiphlogistics and depressants. Every one recognizes the extraordinary fatality of pneumonia among alcoholic subjects; and where the rate of mortality from pneumonia has apparently increased, it is doubtless due rather to the growth of the dissipated and squalid classes in the populations of our large cities than to any modifications of treatment.

MAKE WAY FOR LIBERTY!

The London *Pall Mall Gazette* is stirred with rejoicing on the verdict recently rendered by a coroner's jury at Poplar, England, over the dead body of an eleven-months'-old child, in which verdict the jury abandoned the position heretofore held, we believe, in England, that death of a child resulting from an absolute neglect of all medical care was due cause for action against parents permitting such neglect. The fine fairness of the *Gazette* is shown by its language in describing facts, which, as simple facts, are probably nearly correct.

"Young Goobey was a rickety child of eleven months, who had been ill from its birth, and who at last succumbed to an attack of convulsions. The doctor who conducted the post-mortem was of opinion that it had died of consumptive bowels, and of course swore that if he had been called in in time he could have saved its life. The mother of the child did not call in a doctor. She was a member of the small and curious sect appropriately known as the "Peculiar People," which, amid all the quackeries of rival schools of medicine, holds fast to the prayer of faith and the anointing oil, and are quite content to take their chance of dying, or of letting their children die, rather than violate their religious belief in the sinfulness of resorting to physicians."

After going on to deplore the persecution hitherto practised upon the Peculiar People by the average British juror in the shape of occasional verdicts for manslaughter, persecution which only stiffened their resolution, the *Gazette* expresses its satisfaction that on this occasion "the enemy hauled down his flag and capitulated at discretion — or, in other words, a British jury formally placed on record its conviction that it was useless to censure the Peculiar People any longer, 'as these people's religious belief was so strong nothing could change it.'"

This new apologist for liberty of conscience allows that the case against the mother of little Goobey was very strong. She admitted that she had not called in a doctor, and would not call in a doctor. She had lost no fewer than eight children, who died under the age of three — thanks, possibly, to the "peculiar" treatment of their maladies. When questioned by the coroner, she replied, "We believe in warm water and flannels, and nothing else," excepting, of course, in the prayer of faith. The coroner, Mr. Baxter, we are told, further, in order to elicit how far they were willing to carry their principle, asked, "If you were in a ship with a hole in the bottom, would you do the same?" "Yes," replied this uncompromising witness, "we should trust in the Lord."

The *Gazette* somewhat disingenuously glozes this question and reply as meaning that, in the case supposed, the tenets of the Peculiar People would not forbid them, while praying to God for safety, at the same time to try to stop the leak. But this is just the point which the coroner's question was framed to bring out, namely, that they would simply pray to God and *do nothing* for their own salvation; as, in fact, they did nothing but pray in the case of the child dying from rickets.

This tribune of the people closes its reflections on the triumph of a great principle with the following somewhat grandiloquent burst:—

"The scientific frontier between the authority of the State and the rights of the individual is perpetually in dispute; and it is only when the individual defies the State to do its worst, and proves that he is willing to take the consequences, and then do it again, and so keep on doing it until the State gets tired of sending him to prison, that the individual's claim to consideration gains any recognition. At this moment Parliament holds itself omnipotent enough to do anything except levy a Church rate. There it admits its authority fails. Until we can get men and women to defend civic liberties as tenaciously as these good Peculiar People have defended the liberty to do without the doctor, and the Quakers have protested against Church rates, no civic liberty is safe. But every such victory gained by men who put a conscience to their work is an encouragement to all who care for individual liberty as against ever-encroaching

authority to pluck up courage to push still further forward the boundary line of freedom.'"

Now, precisely this argument could be applied with equal effect to the case of Freeman, the child murderer of Pocasset. He was certainly one of a Peculiar People. He believed, with a fervor which very probably was strong enough to stand the test of imprisonment, that a divine voice called on him, as upon Abraham of old, to slay his child. Let jurors and judges beware how they restrain such a man. Let us get men and women to defend their civic liberties, and "every such victory gained by men who put a conscience to their work" will "push still further forward the boundary line of freedom."

THE TREATMENT OF CONSUMPTION BY RESIDENCE AT HIGH ALTITUDES.

UNDER this head, Dr. John Lowe publishes a short article in *The Lancet*, in which he gives his personal experience as a consumptive, and the benefit which he had derived from a sojourn in an Alpine climate.

There was a deposit of tubercle in the apex of the left lung. Bacilli had been found in abundance. The general symptoms were well marked, and there was a strong family inheritance. He had been to the English health resorts, and tried the usual remedies without benefit. He spent a winter at Davos and Wiesen, and returned home quite recovered.

Dr. Lowe affirms that the English practitioner is utterly unable to cope with phthisis in his own climate. "The English health resorts are the forlorn hope of phthisis, and the so-called respiratory therapeutics constitute one mode of advertising." But it is no use, he says, to send patients with excavations in their lungs to mountain stations; such cases are always hastened in their downward march. It is only in the earliest stages, when there is simply slight consolidation, that these climates of altitude do good; hence the necessity of an early diagnosis, and a resort to Davos, or some other elevated station, before the disease has become established. For patients presenting the earliest physical signs of tuberculosis of the apex, before there is any softening or any fever, even though there may have been hæmoptysis, a sojourn in mountain stations is almost invariably beneficial.

These views are in accordance with those of the best authorities. There is no mountain-cure for patients with large lateral or bilateral cavities.

ON THE DIURETIC ACTION OF STROPHANTHUS.

DR. LEMOINE, of Lille, has made a communication to the Société de Biologie, Paris, relative to the diuretic action of strophanthus. Of all the effects of this medicament, he says, polyuria is the most constant. He has always obtained such effect on giving experimentally to healthy individuals the tincture of strophanthus. In doses of from five to ten drops, almost double the daily quantity of urine is voided. This increased diuresis he has also generally obtained in cardiac patients, unless there be complete asystole, in which case strophanthus rarely succeeds in restoring diuresis. He has also met with want of success when strophanthus has been given in extensive œdema of the lungs.

The diuretic effects of strophanthus last long after discontinuance of the medicine. In some cases, when before treatment the daily quantity of urine voided was only four hundred grammes, he has known it to increase to three thousand under strophanthus; and a fortnight after suspension of the remedy the patients were still voiding two litres a day.

As for the diaphoretic effect of strophanthus, he has found it feeble, if not nil.

MEDICAL NOTES.

— The young doctor, with a reputation to make, always feels grateful when his patients get well. With the old and well-established physician the case is different. If his man dies he simply says, "Everybody must die," and the clergyman of his church comes to the funeral and stands in with him, and says, "The Lord giveth and the Lord taketh away," and there you are. — *New Orleans Picayune.*

— Dr. Seaver, the director of physical culture in Yale University, has reported his measurements of the two hundred and four members of the Yale Freshmen class. He finds that there are no men whose physical condition will deter them from successfully pursuing their studies at Yale. This is somewhat remarkable, considering the fact that for six years there have been in each incoming class men whom it has been found necessary to advise not to continue in the university on account of their poor physical condition. There are no phenomenal developments found in '92. The lightest man weighs eighty-seven and a half pounds, and the heaviest two hundred pounds. There are about half a dozen whose physical development is perfect, who will make acceptable crew men if they care to compete for positions on the university crew.

—The Boylston medical prize of four hundred and fifty dollars has been awarded by Harvard University to Dr. George H. F. Nuttall, of San Francisco, for a dissertation entitled, "A Contribution to the Study of Immunity."

—An Indian correspondent of the *Medical Press* says that the more fashionable parts of Bombay are suffering unheard-of torments from a plague of mosquitoes. An unusually large black variety of the insect has made its appearance about the Cumballa and Malabar Hills, and the inhabitants can neither eat, drink, walk, drive, nor sleep for them. They swarm in myriads over every one and everything, and their bite is of a most pernicious and painful character, and they do not give their victims a moment's peace. Even the native servants are almost driven mad by them, and for the time being have become walking medicine-shops. The strong-smelling native applications which they smear over their skins are of the most offensive kind. The application which physicians are prescribing is a strong solution of phenyl, but this soon fails to keep away the blood-sucking culex; the skin becomes irritable from its repeated application. A female doctor has been trying oil of lemons, that is, olive oil with a large admixture of essence of lemons. This seems for a time to prevent them settling on an exposed part, but nothing answers very long, for have their fill of blood they will. It is believed that they were imported into the place in a new water-tank just erected for the better water-supply of this part of Bombay. But the correspondent thinks this a mere coincidence, and attributes the actual cause to the very small rainfall, which has been very much below the average of years.

BOSTON AND NEW ENGLAND.

—The executive council of Massachusetts, after giving two or more hearings to petitioners for the reprieve of Mrs. Sarah J. Robinson, the Somerville poisoner, who was sentenced to be hanged November 16, has voted to commute her sentence to solitary imprisonment for life in the State Prison.

—The Massachusetts State board of lunacy and charity has appointed Dr. Albert R. Moulton, of the Worcester asylum for the insane, as inspector of charitable institutions, in the place of Mr. F. B. Sanborn, removed. Dr. Moulton was educated at Bowdoin College, where he received the degree of M. D. in June, 1876. Soon after graduation he was called to the asylum for the insane at Concord, N. H., as assistant physician, and thence to the McLean asylum at Somerville. During the past eleven years he has been connected with the Worcester asylum, occupying the position of first assistant since 1881. His appointment has been approved by the governor, and he will at once enter upon the discharge of the duties of the office.

NEW YORK.

—In consequence of the prevalence of diphtheria among the children of Tottenville, Staten Island, the local board of health has ordered the public schools there to be closed.

—It is said that in consequence of the impurity of much of the Hudson river ice, and the prejudice against it that naturally exists in the public mind on this account, some of the New York companies are negotiating for the procuring of their supply of ice from Lake Champlain during the coming season.

—By the will of the late John Guy Vassar, of Poughkeepsie, $130,000 is left to the various departments of Vassar College, of which $10,000 is to be applied to the purchase of materials and apparatus of the Vassar Brothers laboratory. For the completion of the Vassar Brothers hospital at Poughkeepsie $25,000 is bequeathed, and $200,000 in securities is given to be part of the permanent maintenance fund; while $17,000 more is left to this institution with the condition that certain annuities be paid from it. Among the other bequests are $181,000 for the founding and support of an orphan asylum, and $70,000 and some valuable real estate to the Vassar Brothers Home for Aged Men.

Miscellany.

A CASE OF PREGNANCY IN THE LEFT HALF OF A DOUBLE MONSTER.

We find a report in the *London Medical Recorder* (Oct. 20, 1888) on the above subject. The patient was a well-nourished girl, aged 19, married about one year. She had suffered from amenorrhœa and vomiting for two months. The writer discovered four inferior extremities, two navels, and duplicity of all the organs below them. She had menstruated from both uteri regularly till the present illness; one alimentary tract was occasionally constipated, whilst the other was relaxed. A portrait of the patient is appended; she is fully dressed, with her skirts raised to the knees, exposing only the four lower extremities. The outermost left leg is of the proper length and well developed, the outermost right is long, but thin; the two central legs are much shorter. At first sight, the latter seem as though they belonged to a thoracopagous parasite, but the toes and knees are directed forwards; they are covered by stockings and boots, so that the side to which they belong is not clearly indicated. Pregnancy in the left uterus was detected. When informed of the nature of her case, she said: "If it had been in my right side I would come nearer believing that you are correct." As she was in very bad health, and the left pelvic outlet measured but two inches antero-posteriorly by one and a half laterally, labour was induced by ergot and by two introductions of the sound. She was safely delivered of a perfectly formed fœtus, "of ordinary size for three and a half months' term." From the evidence of the patient it would appear that the right genitals were, as a rule, used functionally. The case

was originally recorded by Dr. Whaley in the *Atlanta Medical and Surgical Journal*, and the reporter in the *Recorder* remarks that "it is unfortunate that Dr. Whaley's paper was 'simply an outline or synopsis of the case from memory, as the notes in the case have been misplaced.' No mention is made as to how far the contiguous parts of the two pelves were fused or separate. The monstrosity was probably posterior dichotomy, sub-variety schizorachis.

OLD FAMILIES.

SOME interesting facts in respect to population were noted in a "Demographic Study of the Diminution or Increase of Families," recently read by Dr. Gustave Lagneau before the Académie de Médecine, which are referred to at some length by the *British Medical Journal*. Dr. Lagneau quoted Littré, who had demonstrated that history proved a remarkable phenomenon. Free populations, the citizens of ancient commonwealths, could never maintain themselves by reproduction. All aristocracies and close bodies of men have gradually lost in number, and would have become extremely reduced without occasional mixture with new blood. Between 1583 and 1654 the Sovereign Council of the City of Berne admitted 487 families to citizenship. In 1783 only 108 of these families had escaped extinction, Out of 133 families composing the Council of Geneva in 1789, only 92 could be traced, at home or abroad, in 1873. Out of 458 baronets created by James I. and Charles I., between 1611 and 1648, only 107 of their titled representatives remained in 1731. In 1840 only 8 out of 80 noble families existing in 1400 had escaped extinction. M. Benoiston de Châteauneuf, after scrutinizing the pedigree of 380 noble French families, found that their average duration was three hundred years. The great burgher families of the Hanseatic towns of Holland and Venice disappeared rapidly; not one of the original patrician families of Zealand is now in existence. Lainé, carefully examining thirty-one charters of cities in Languedoc, Burgundy, Lorraine, and Brittany, granted at the end of the twelfth century, authenticated 314 noble families, only represented in 1840 by 12 survivors. Turning to the poor, the extinction of small tenant families, easily traced by legal documents, appears almost as rapid. Out of 127 families existing in the commune of Marigny-en-Orxois, now in the department of the Aisne, in 1555, only 14 appeared to be in existence in 1886. Englishmen must not lay too much stress on the depopulating effects of great wars in Continental countries. War losses are rapidly repaired; Frederick the Great said, after one bloody engagement in the Seven Years' War: "Une nuit de Berlin réparera tous ces ravages." The struggle for existence in Anglo-Saxon communities must dislocate families in any given district very rapidly. Herodotus, in his Egyptian chronology, remarked that three generations of men represented a century. Calculating on the Father of History's principles, a generation lasts about as long in France, although careful calculation, from 1788 to 1888, brings the average duration of a generation, from male to male in a family, down to thirty-one years. M. Lagneau ends his important monograph with a gloomy sentence. The population of the kingdom of Prussia is increasing at the rate of 4.14 children to each marriage. Twenty-five years ago the French nation increased at the rate of 3.08, but now at only at 2.97, per marriage. Strange it must ever seem that civilized countries are all complaining that their population is either too great or too stationary; but the subject is too complex for discussion here.

Correspondence.

NERVOUS AFFECTIONS FOLLOWING INJURY.

MR. EDITOR, — Since the publication of my paper with the above title, I have received further information concerning Dennis B. (Case XI.), which I should like to note. His symptoms gradually increased, he grew steadily weaker, the mental deterioration became more marked, and, about a year from the time when I saw him, he died. Unfortunately an autopsy could not be obtained. The fatal termination in so short a time shows beyond a doubt that the diagnosis of an organic affection of the central nervous system was correct, and it seems to me to bring further evidence to the support of the opinions held in my paper, that organic affections of the nervous system are not uncommon as the result of "concussion," and that, consequenlty, the prognosis is grave.—Yours truly,

PHILIP COOMBS KNAPP, M.D.

BUSTLES.

MR. EDITOR,— Sensitive musicians are said to suffer tortures from itinerant bands: their attention is attracted by failures which are unheeded by people of less cultivated ears. The physician in the street is said by his friends to notice all the deformities and physical defects that pass him. He has learned to look for physical peculiarities and it is a matter of interest to look for such things. Some things that he meets give him positive pain. It is something more than disagreeable to see a girl laced more tightly than usual. His mind sees the deep sulcus in her liver, and notes the prominent abdomen forced to hold the organs squeezed out of their proper position. The pretty foot is not contained for him by the shoes pointed at the toes and several sizes too small. In such a foot he sees the prominent great toe joint with its painful bunion and the toes riding each other. Such acquired and cultivated deformities are painful to him, and he sometimes produces little sermons about them. There are other deformities that are simply sham deformities, that amuse him not a little. Why people should so fashion their dress as to feign a deformity which they have not is incomprehensible — and of all these incomprehensible deformities the bustle is the worst.

When the doctor is once attracted by the excrescence he sees it everywhere. The advertisement stares him in the face from the top of the crowded horse car, while women unable to seat themselves squarely illustrate the advertisement on the seats below. Were the bustle so firmly attached as to seem a part of the person it might not be so bad, but most women turn inside their bustles as independently as a stick inside a hoop, or rather the woman and her bustle turn like the fragments of a broken bone — the woman, the distal fragment, makes a half turn before the bustle, the other fragment, takes up the motion.

Occasionally, when the bustle is very long, it swings like an elastic pole, and when you run against it in the street, or on the cars, it gives you an uncanny feeling, such as is supposed to be felt at the contact of a ghost.

But the fun is to see it caricatured in the women who cannot afford all the latest inventions. Walking not long ago in a part of the city where the serv-

ants are slipshod, a woman, presumably a servant, stood upon a doctor's door step conversing with a woman on the next step, and, with back to the street, her bustle, made of rags and newspapers, was plainly visible through that gap in the skirt which seems like a trap to betray a woman's untidiness. The same deficiency in the development of the skirt — incomplete union, like hare-lip — sometimes shows a mass of wire protruding — it may be tangled and awry, or just from the shop.

Even children, only little girls I am glad to say, are laden with this excrescence, and one little girl whose dresses have not the adjunct was not long ago heard to explain the lack by saying that her "natural bustle" was all she needed.

My attention was attracted on the street not long ago by a boy of tender years on crutches. I observed him somewhat narrowly — for I love to watch the little cripples. He was attended by a young woman that I am sure was not his mother. She was dressed in a dark blue dress made without superfluous material, and gathered at the waist by what looked like a very ordinary piece of cord. She helped the little fellow into a car that would pass that admirable charity, the Children's Hospital, with an ease and gentleness that showed she was accustomed to care for him — but her every motion disclosed a hideous hump of I know not how many newspapers. She too had her vanity, but it rendered what should have been a graceful act hideous.

The object of this communication, however, is not only to draw attention to the bustle as a deformity, but particularly to mention its really deleterious effects upon its wearer. The woman with a bustle can never sit down in a natural position. It is absolutely impossible for her to rest her back against the back of any seat of ordinary construction. I have no doubt some of the severe backaches in women whose duties keep them seated all day are due to, or at least are aggravated by, this disability. In addition, when the woman stands, the weight of the back breadths of her dress are thrown so far behind as to make her lean forward to maintain the centre of gravity in its proper position. This is only worth mention when the dress is of heavy material. The bustle, like the car stove, must go, and I am glad to hear it has even begun to move off; but I am not unwilling to aid in accelerating its departure.

Yours very truly,

SENEX.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 3, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	630	208	18.08	14.24	2.40	.96	7.84
Philadelphia	1,016,758	323	96	10.54	15.19	93	4.03	4.03
Brooklyn	751,432	289	90	19.25	15.05	1.05	4.20	8.05
Chicago	760,000	231	99	24.08	16.04	1.29	5.16	13.76
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	152	52	16.50	19.14	4.62	2.64	5.94
Boston	407,024	182	56	13.75	13.20	3.85	4.40	3.30
Cincinnati	325,000	88	—	15.96	5.70	3.42	5.70	6.84
New Orleans	248,000	140	44	22.72	1.42	7.81	7.14	7.81
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	75	21	11.97	21.26	2.66	7.98	1.33
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	19	5	15.78	15.78	5.26	—	—
Charleston	60,145	33	11	6.06	27.27	3.03	—	3.03
Portland	40,000	11	4	—	27.27	—	—	—
Worcester	76,328	29	12	13.80	13.80	3.45	—	6.90
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	21	5	9.52	19.04	4.76	—	4.76
Fall River	61,203	27	16	22.20	7.40	11.10	—	3.70
Lynn	51,467	11	—	—	—	—	—	—
Lawrence	40,175	17	4	5.88	11.76	—	5.88	—
Springfield	39,952	12	5	16.66	8.33	8.33	—	8.33
New Bedford	36,298	9	4	33.33	11.11	11.11	—	22.22
Somerville	33,307	14	3	14.28	35.70	—	7.14	7.14
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	5	—	—	—	—	—	—
Chelsea	27,552	11	—	27.27	18.18	9.09	9.09	—
Haverhill	24,979	6	2	—	33.33	—	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	5	1	20 00	—	—	—	20.00
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	—	—	—	—	—	—	—
Malden	18,932	7	—	—	28.56	—	—	—
Fitchburg	17,534	—	—	—	—	—	—	—
Waltham	16,651	7	1	14.28	28.56	—	—	14.28
Newburyport	13,839	5	—	—	20.00	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2,389: under five years of age 739; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 404, consumption 331, acute lung diseases 299, diphtheria and croup 163, typhoid fever 70, diarrhœal diseases 64, scarlet fever 45, malarial fever 24, whooping-cough 16, measles 13, cerebro-spinal meningitis eight, erysipelas one. From scarlet fever, New York 21, Philadelphia 11, Brooklyn and Chicago six each, Fall River one. From malarial fever, New Orleans 10, Brooklyn six, New York and Baltimore three each, Philadelphia and Nashville one each. From whooping-cough, New York eight, Brooklyn four, Philadelphia and Baltimore two each. From measles, New York seven, Chicago two, Philadelphia, Brooklyn, Worcester and Fall River one each. From cerebro-spinal meningitis, New York four, Boston two, Chicago and Chelsea one each. From erysipelas, New York one.

The meteorological record for the week ending November 3, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
Saturday, Nov. 3, 1888.	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.	Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration. Hours & Min.	Amount in Inches.
Oct. 28	29.77	58.0	63.0	50.0	100	59	80.0	S. W.	N. W.		12	26		R.	O.			.33
" 29	29.77	45.0	52.0	42.0	64	57	60.0	W.	W.		23	12		F.	C.			.04
" 30	30.16	40.0	47.0	38.0	59	52	56.0	W.	N. W.		9	7		T.	C.			
" 31	30.29	46.0	58.0	34.0	55	35	45.0	S. W.	S. W		9	24		F.	C.			
Nov. 1	30.26	57.0	74.0	51.0	67	65	66.0	W.	S. W.		17	9		O.	C.			
" 2	30.08	58.0	72.0	52.0	79	69	74.0	S. W	S. W.		12	19		C.	O.			
" 3	29.83	56.0	68.0	48.0	76	67	72.0	S. W.	W.		12	15		O.	C.		2.30	.03
Means for the Week.	30.02		62				65											

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM NOVEMBER 3, 1888, to NOVEMBER 9, 1888.

NORRIS, BASIL, lieutenant-colonel, surgeon, will be relieved from duty in the Department of the Columbia by the commanding general of that department, and will report in person, on or before November 14, 1888, to the commanding general Division of the Pacific for duty as medical director of that division and of the Department of California. Par. 14, S. O. 255, A. G. O., Washington, November 1, 1888.

By direction of the Secretary of War, Lieutenant-colonel Edward P. Vollum, surgeon, on being relieved from duty as medical director Department of Texas by Lieutenant-colonel Joseph C. Baily, assistant medical purveyor, under War Department order dated October 31, 1888, S. O. No. 255, will repair to New York City, assume the duties of acting assistant medical, and take charge of the medical purveying depot at that place. Par. 2, S. O. 255, A. G. O., Washington, November 1, 1888.

ALEXANDER, CHARLES T., lieutenant-colonel, surgeon, is relieved from further duty in the Department of Dakota, and will report in person to the commanding general Department of the Columbia for duty as medical director of that department. Par. 14, S. O. 255, A. G. O., Washington, November 1, 1888.

BAILY, JOSEPH C., lieutenant-colonel, assistant medical purveyor, is, at his own request, relieved from the charge of the medical purveying depot in New York City, and is, by direction of the President, under the provisions of the Act of Congress, approved June 23, 1874, assigned to duty as surgeon in the Medical Department. He will report in person to the commanding general Department of Texas, for assignment to duty as medical director of that department, to relieve Lieutenant-Colonel E. P. Vollum, surgeon. Par. 1, S. O. 255, A. G. O., Washington, November 1, 1888.

By direction of the Secretary of War, Lieutenant-colonel Joseph C. Baily, assistant medical purveyor, will transfer at once the public funds for which he is now responsible to Captain Henry Johnson, medical storekeeper, who will assume temporary charge of the medical purveying depot in New York City, retaining charge thereof until relieved in person by Lieutenant-colonel E. P. Vollum, surgeon, under his assignment as acting assistant medical purveyor, to whom Captain Johnson will then transfer the public funds. Par. 1, S. O. 257, A. G. O., Washington, D. C. November 3, 1888.

By direction of the Secretary of War, leave of absence for two months, to take effect on the completion of his present duties, is granted Major Henry McEldery, surgeon United States Army. Par. 3, S. O. 256, A. G. O., Washington, D. C., November 2, 1888.

EWEN, CLARENCE, captain, assistant surgeon, is relieved from duty at Fort Sidney, Neb., to take effect on the expiration of his present leave of absence, and will report in person to the commanding officer Madison Barracks, N. Y., for duty at that post. Par. 2, S. O. 258, A. G. O., Washington, November 5, 1888.

APPEL, DANIEL W., captain, assistant surgeon, is relieved from duty at Fort Davis, Texas, and will report in person to the commanding officer Fort Sill, Ind. Ter., for duty at that post, reporting by letter to the commanding general Department of the Missouri. Par. 2, S. O. 258, A. G. O., Washington, November 5, 1888.

Leave of absence for one month, with permission to apply for an extension of one month, is granted Captain J. Van R. Hoff, assistant surgeon. S. O. 134, Headquarters Department of the Missouri, Fort Leavenworth, Kans., November 1, 1888.

PRICE, CURTIS E., captain, assistant surgeon, for two months, with permission to apply for an extension of ten days. Par. 2, S. O. 257, A. G. O., Washington, November 3, 1888.

WOODS, MARSHALL W., captain, assistant surgeon, for one month, with permission to apply for an extension of ten days. Par. 2, S. O. 257, A. G. O., Washington, November 3, 1888.

By direction of the Secretary of War, Captain John J. Cochran, assistant surgeon, is relieved from temporary duty at Headquarters Division of the Pacific, and will report in person to the commanding officer Fort Adams, R. I., for duty at that post. Par. 2, S. O. 256, A. G. O., Washington, November 2, 1888.

By direction of the Secretary of War, Captain Norton Strong, assistant surgeon, is relieved from duty in the Department of Arizona, and will report in person to the commanding officer Fort Schuyler, New York, for duty at that post, and by letter to the commanding general Division of the Atlantic. Par. 4, S. O. 255, A. G. O., Washington, November 1, 1888.

OWEN, W. O., jr., captain, assistant surgeon, Fort Leavenworth, Kans., will proceed at once to Fort Sill, Ind. Ter., and report to the commanding officer for temporary duty at that post. Headquarters Department of the Missouri, S. O. 133, par. 1. Fort Leavenworth, Kans., October 30, 1888.

By direction of the Secretary of War, 1st Lieutenant James D. Glennan, assistant surgeon, recently appointed, will repair from this city to Willet's Point, New York, and report in person to the commanding officer of that post for duty. Par. 3, S. O. 255, A. G. O., Washington, November 1, 1888.

By direction of the Secretary of War, 1st Lieutenant Alfred E. Bradley, assistant surgeon, recently appointed, will report in person to the commanding officer David's Island, New York, for duty at that depot, reporting by letter to the superintendent of the recruiting service, New York City. Par. 14, S. O. 260, A. G. O., November 7, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING NOVEMBER 10, 1888.

DICKINSON, D., surgeon. Ordered to Naval Hospital, Mare Island, Cal.

BRADLEY, G. P., surgeon. Detached from Naval Hospital, New York and to "Iroquois."

PERSONS, R. C., surgeon. Detached from Army and Navy Hospital, Hot Springs, Ark., and to Naval Hospital, New York.

NORFLEET, ERNEST, passed assistant surgeon. Detached from Naval Hospital, Mare Island, Cal., and to the "Trenton."

HARRIS, H. N. T., assistant surgeon. Detached from Naval Hospital, Mare Island, Cal., and to the "Kearsarge."

SAYRE, *A.* S., assistant surgeon. Ordered to examination for promotion.

BEYER, H. G., passed assistant surgeon. Detached from "Trenton" and granted six months leave, with permission to leave the United States.

PATRICK H. BRYANT and LUTHER L. VON WEDEKIND. Commissioned assistant surgeons, U. S. Navy.

APPOINTMENTS.

DR. JOSEPH P. DWYER, the originator of intubation of the larynx, has been appointed Professor of Diseases of Children in the New York Post-Graduate Medical School and Hospital.

DR. R. J. HALL has been appointed Professor of Anatomy in the College of Physicians and Surgeons at New York.

DR. CHARLES MCBURNEY has been appointed Adjunct Lecturer on Surgery in the same school.

BOOKS AND PAMPHLETS RECEIVED.

Diseases of the Skin: Their Descriptions, Pathology, Diagnosis, and Treatment. By H. Radcliffe Crocker, M. D. Lond., etc., etc. With seventy-six illustrations. Philadelphia: P. Blakiston, Son & Co. 1888.

Students' Guide Series. The Diseases of the Chest, including the Principal Affections of the Pleuræ, Lungs, Pericardium, Heart, and Aorta. By Vincent D. Harris, M.D. Lond., F.R.C.P., etc., etc. With fifty-five illustrations. Philadelphia: P. Blakiston, Son & Co. 1888.

The Dispensatory of the United States of America. By Dr. Geo. B. Wood and Dr. Franklin Bache. 18th edition rearranged, thoroughly revised, and largely rewritten. With illustrations by H. C. Wood, M.D., LL.D., Joseph P. Remington, Ph.M., F.C.S.; and Samuel Sadtler, Ph.D., F.C.S. Philadelphia: J. B. Lippincott Company. 1888.

Original Articles.

THE DIAGNOSIS AND MEDICAL TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.[1]

BY REGINALD H. FITZ, M. D.,

Professor of Pathological Anatomy in Harvard University, and Physician to the Massachusetts General Hospital.

OBSTRUCTION BY ABNORMAL CONTENTS.

Acute obstruction of the intestines by abnormal contents, as biliary and intestinal calculi, more or less inspissated fæces and foreign bodies, form a series, where plugging of the bowel is the immediate cause of the disturbance.

Foreign bodies introduced into the mouth and rectum, and there causing symptoms of acute obstruction, are so immediately recognized and their treatment so apparent, that they require no consideration in the present communication. If taken into the mouth they usually offer no difficulty of diagnosis, if intestinal obstruction is to follow. The etiology is usually clear; the symptoms, as shown in the three cases of this sort occurring during the past eight years, are so mild, that the chief, if not the sole, evidence of obstruction was the absence of a stool for three days in two instances, and for twelve days in a third. Pain and nausea or vomiting were absent, except in an infant of twelve months, who had swallowed wool-fibres. There was no tympany. A soft tumor near the cæcum, on the fourth day of absent stools, was found in one case, and was probably composed of lumbrici. There were no associated symptoms to suggest a more serious cause of tumor in the cæcal region.

There were two cases of intestinal calculi which offered grave symptoms of obstruction. The calculus in one case was composed of shellac, in the other of date seeds and gritty material.

The number of cases of obstruction from abnormal contents is thus reduced to twenty-three of biliary calculi, nineteen of fæces, and two of enteroliths, making forty-four in all.

This number may seem small, but in a critical consideration of reported cases, it is necessary to exclude many as doubtful. This is especially true with regard to gall-stones and fæcal masses. If the patient dies, and a gall-stone obstructs the bowel, the evidence furnished is rarely sufficient to exclude the possibility of the obstructive symptoms resulting from a peritonitis. The latter, occasioned, not by the presence of the calculus in the bowel, but by the destructive processes associated with its entrance into the gut. Medical treatment in this class of cases may often prove efficient, since the symptoms of obstruction may be due to the peritonitis and not to the plugging.

Similar statements hold true with regard to reported cases of obstruction from fæces. If fæcal tumors are found, and symptoms of intestinal obstruction are present, it by no means follows that the symptoms are immediately due to the fæces. An associated peritonitis from an inflamed appendix is of frequent occurrence, and alone suffices to suggest the diagnosis of obstruction. With the presence of a fæcal tumor the diagnosis seems to be substantiated. The analysis which is to follow will show, however, that enormous fæcal accumulations may exist, and very few symptoms arise to suggest an attack of acute internal obstruction.

The sex of the cases of obstruction from abnormal contents, is as follows: —

	Gall-stones.	Fæces.	Enteroliths.	Total.
Males	5	8	2	15
Females	18	11	0	29
	23	19	2	44

Obstruction from gall-stones thus occurred among females in two-thirds of the cases; while in obstruction from fæces the question of sex is not important.

The age at which the obstruction occurred is seen in the following table: —

Year of Age.	Gall-stones	Fæces.	Enteroliths	Total
At 8		1		1
From 10–20		4		4
20–40		4		4
40–45	1	0		1
45–50	3	0		3
50–55	3	2	1	6
55–60	6	2		8
60–65	3	4		7
65–70	3	1		4
70–75	2			2
75–80	1	1		2
	22	19	1	42

It is thus apparent that obstruction from gall-stones occurred only in adults, and after the age of fifty years, in six-sevenths of the cases; that obstruction from fæces may occur at any time of life; while enteroliths were found in adult life.

In eleven cases, nearly one-half, of obstruction from gall-stones there was a previous attack attributed to biliary calculi. In the nineteen cases of fæcal obstruction, habitual constipation, often no dejection for several weeks, was almost invariably present.

The shellac-calculus was present in a cabinet-maker who was accustomed to drink an alcoholic solution of shellac. In the cases of fæcal obstruction loose dejections were occasionally noticed, although the bowels contained large quantities of fæces.

The accompanying table shows the date and relative frequency of the important symptoms of obstruction from gall-stones: —

Date.	Pain.	Nausea or Vomit.	Fecal vomit	Tympany.
1st day	13	10		1
2nd day		2	1	1
3rd day		1	3	1
4th day		1	1	2
5th day			2	3
Later or not given	6	3	7	5
	19	17	14	13

[1] Continued from page 472.

Abdominal pain was the initial symptom of the attacks of obstruction in two-thirds of the cases. It was usually sudden, severe, or intense, sometimes described as griping. It was exactly localized on the first day in but two cases. In one the seat was referred to the epigastrium, in the other to the hypogastrium. After the first day the pain was referred to the epigastrium in four cases, to the navel in two, to the hypogastrium in two and to the right iliac fossa in one.

Nausea or vomiting was present on the first day in about three-fifths of the cases. The vomit was inky in one case on the third day, and bloody in another on the fourth day. It was slight in two cases. Fæcal vomit was present in nearly two-thirds of the cases of obstructing gall-stones, and, as far as could be ascertained, most frequently on the third day.

Tympany was present nearly as often as fæcal vomiting. It was usually slight or not excessive, and was repeatedly stated to have been absent.

A tumor was rarely noticed. Once in the right iliac fossa, and proved to be the calculus. Twice at the navel on the third day. It is stated to have been as large as a child's head in one of these cases. The tumor was present in the left inguinal region in one case, and once was found on rectal examination.

The temperature was as high as 101° F. in one case and between 99° F. and 100° F. in three cases on the fourth and fifth days. In the majority of cases it was either normal or subnormal.

Jaundice and hiccough were symptoms in but two cases of gall-stones, and these occurred early. The urine was diminished in quantity in five instances, being noted as scanty on the second, fourth, and fifth days, and as absent on the sixth day. Once it contained cholesterine discharged from the rectum.

Of the twenty-three cases of obstruction from gall-stones there were thirteen deaths and ten recoveries. Twelve cases were treated medically and eleven surgically; of the former eight recovered and four died; of these latter one on the fifth, seventh, and tenth days respectively, and one on a date not given.

In the cases of recovery the calculi were passed on the fourth, fifth (in two cases), tenth, fourteenth, fifteenth, seventeenth, and twentieth days.

Surgical interference took place as follows:—

Date.	Number of Cases.	Recovery.	Death and Date.
3rd day	1	0	1 8th day.
4th "	1	0	1 4th "
5th "	1	0	1 5th "
7th "	2	1	1 7th "
8th "	2	0	2 {8th " 9th "
9th "	1	0	1 14th "
17th "	1	0	1 18th "
Not given.	2	1	1 Not given.
	11	2	9

The seat of the calculus in the fatal cases was the ileo-cæcal region in four, the jejunum in three, the ileum in three, the small intestine in two, and the duodenum in one case.

Since all the operative measures after the seventh day terminated fatally, and five cases recovered after this date under medical treatment alone, the condition of the patient must determine the treatment to be followed.

In fæcal obstruction pain at the outset was rare. It was present in six cases only, one-third of the whole number, and was absent on the fifth day in one instance, on the fifteenth in two, and on the twentieth in one. It was seated in the right iliac fossa, in the region of the stomach and liver, and in the left iliac fossa each in one case.

Nausea or vomiting was present in nine cases and absent in ten. It was of late occurrence, the date being stated in only three cases, in these on the fifth, fourteenth, and nineteenth days. It was fæcal in but three cases and in these the only date assigned was the twentieth day.

Tympany was present in rather more than a third of the cases, and usually at a late date, after the first week. The abdomen of a child measured thirty-one inches, of an adult forty-three inches in circumference.

An abdominal tumor was noted in about one-half of the cases of obstruction from fæces. It occupied the entire abdomen in three instances, was situated in the left lumbar region in two, in the left hypochondrium, the left iliac fossa, the right side and right iliac fossa each in one case. The tumor was described as elongated, rounded, nodular, slightly movable, hard, dull. Scybala were occasionally to be felt in the rectum.

The temperature was rarely above the normal. The urine was scanty on the fifteenth and twentieth days in two cases of fæcal obstruction.

The seat of the obstruction was the large intestine, and its lower part was more often involved than the upper. This evidence is in favor of the view that the fæcal tumor in so-called stercoral typhlitis is rather the result of an inflamed appendix than the cause of an inflamed cæcum.

There were fifteen recoveries and four deaths among these cases. In one the death was due to perforation of the bowels, in another it was attributed to pulmonary congestion, and in two there was no obvious anatomical cause.

In the cases which recovered the obstruction lasted from two to three weeks in three cases, from three to four, four to five, five to six weeks, one in each period, and in one case it lasted for four months.

The medical treatment consisted of large enemata, irrigations, electricity, and various purgatives. Laparatomy, colotomy, and division of the anus were each performed in one instance.

It is obvious from the above consideration that obstruction from fæces may be excluded from the series of acute, internal, mechanical obstructions, because abdominal pain, tympany, and fæcal vomit were rare and late, while nausea or vomiting was also of late occurrence. A tumor was present in half the cases, and was characteristically fæcal. Fever was absent. Furthermore, rectal injections are likely, at once, to give positive evidence of fæcal obstruction.

The rarity of obstructing intestinal calculi was such that they may practically be disregarded. If present, their significance is that of gall-stones.

STRICTURES AND TUMORS.

Malignant disease and strictures of the intestine, and abdominal tumors outside the intestine, are sometimes the cause of symptoms of acute obstruc-

tion, and the former may require consideration in differential diagnosis.

There have been fifteen cases of such strictures and tumors of the intestine since 1880, of which ten occurred among females and five among males.

The age of these patients was as follows:—

Years of age.	Number of cases.
From 20–30	2
" 30–40	1
" 40–50	3
" 50–60	4
" 60–70	5
	15

Four-fifths of the cases thus occurred after the age of forty, and three-fifths after the age of fifty years.

In two-thirds of the patients antecedent symptoms of abdominal disturbance were present as follows:—

Chronic abdominal pain	in 3 cases
Constipation	" 3 "
Irregular and bloody discharges	" 1 "
Rectal uneasiness	" 1 "
Previous attacks	" 1 "
Hernia	" 1 "
	10

The date and relative frequency of the important symptoms of intestinal obstruction from the strictures and tumors is shown in the following statement:—

Date.	Pain.	Nausea or Vomit.	Tympany.	Tumor.
1st day	8	4		
2d "	1	1		
3d "		2	1	
4th "		1	1	
5th "		1	1	
6th "			3	
Later or not given		3	4	4
	9	12	10	4

Although pain was the first symptom in one-half of the cases, in two the attacks began with constipation. The pain was seated in the lower abdomen in three instances.

The vomit became fæcal in five cases; the earliest late was the third day. The tympany might be enormous on the third day, or moderate on the sixth day.

A tumor was perceptible by rectal examination in two cases, and by palpation in the iliac fossæ each in one case. In three instances there were visible intestinal coils.

The temperature was not elevated before the sixth day, was never higher than 102.2° F., and then not till the tenth day.

The lesion and its seat were as follows:—

Cancer of the sigmoid flexure	in 5 cases.
" " rectum	" 3 "
" " colon	" 2 "
" " cæcum	" 1 "
Stricture of the ileum	" 1 "
" " cæcum	" 1 "
" " colon	" 1 "
" " rectum	" 1 "
	15

The obstruction was thus of the large intestine in fourteen cases, and of the small intestine in but one instance. It was situated in the left iliac fossa or pelvis in nine cases, nearly two-thirds of the whole number, and in the right iliac fossa in two cases. The seat was thus in the lower abdomen in nearly four-fifths of all the cases of acute obstruction from strictures and tumors.

Of the fifteen cases eleven died and four recovered from the immediate symptoms of obstruction. The nature of the lesions is such that surgical treatment alone offers hope. In eight cases where death occurred without surgical treatment, it took place on the fourth, fifth, eight, twelfth, eighteenth, and fifty-fourth days each in one case, and on the seventeenth in two cases.

Surgical treatment was employed in seven cases, with the following immediate result:—

Date of operation	Number of cases.	Recovery.	Date of death.
5th day	1	1	0
7th "	1	1	0
8th "	1	0	1, after 9 weeks.
9th "	2	2	0
14th "	1	0	1, 17th day.
Not given	1	0	1, same day.
	7	4	3

(To be continued.)

SOME POST-HEMIPLEGIC DISTURBANCES OF MOTION IN CHILDREN.[1]

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In a paper[2] which I had the honor of presenting to this Association a year ago, I spoke of the frequent occurrence of post-hemiplegic disturbances of motion in cerebral infantile paralysis. Certain forms of these disturbances have been carefully studied and are well known, among them being athetosis and post-hemiplegic chorea; other forms, such as ataxia, post-hemiplegic paralysis agitans, and post-hemiplegic pseudo-sclerosis, are less common. It is not my purpose, however, to speak in detail in this paper of these various forms of post-hemiplegic disturbance of motion. The exhaustive treatise of Greidenberg[3] renders such a task unnecessary, but it may be well to cite for reference the elaborate classification which he makes of these phenomena — the most thorough schedule that has yet appeared.

- **Contractures**
  - Apoplectic
    - Spasms
      - Clonic.
      - Tonic.
      - Intermitting.
      - Muscular rigidity.
    - Early. Paralytic, passive, temporary.
    - Late — Constant, continuous, fixed, changeable (latent).
  - Increased tendon reflexes.
  - Associated movements.
- **Tremors**
  - Reflex—clonus.
  - Essential
    - Tremor proper.
    - In the form of paralysis agitans.
    - In the form of disseminated sclerosis.
  - } Mixed forms in different combinations.
- **Hemichorea**
  - Constant.
  - On intended movement — disturbance of co-ordination (hemiataxia).
- Athetosis.

The following cases present a form of post-hemiplegic disturbance of motion which, on analysis, can be made out to be a combination of some of the

[1] Read before the American Neurological Association at the First Triennial Congress of American Physicians and Surgeons, 20th September, 1888.

[2] Hemiplegia in Childhood. Journal of Nervous and Mental Disease, August, 1887.

[3] B. Greidenberg. Ueber die posthemiplegischen Bewegungsstörungen. Archiv f. Psychiatrie, xvii. 131, 1886.

forms in Greidenberg's table, but which have not yet been thoroughly described.

Observation I. George E., three and a half years. First seen June 15, 1887. History of epilepsy in mother's family, and his mother herself is epileptic, having had two convulsions during pregnancy. He is the first child; was born after an easy labor of twelve hours' duration, without the use of instruments, the head presenting. No history of injury. He was a backward child, and did not sit up until the age of two. At present he can stand and walk a step or two with support, but usually does not attempt it, getting about by creeping. He has had one attack in the night, probably convulsive, of which no details could be obtained. Ever since he began to use his limbs his mother has noticed that he could not use his left arm well, and that his right leg was not as good as the left. He is said to be bright, to be able to sing with fair correctness, to repeat little verses, and to have a good memory. The speech, however, to a stranger is quite indistinct. He breathes through the mouth, drools constantly, and has some slight difficulty in swallowing. He is subject to colds, as the clothing over his chest is constantly wet from his drooling. The appetite is dainty, and he has a delicate stomach. He still soils himself occasionally. The child is well developed, with no deformities, the two sides being symmetrical. The head is nineteen and three quarter inches in circumference. The left leg and arm are held rather rigidly, and there is inco-ordination when he tries to use the left hand, the movements being awkward and jerky, but there are no involuntary movements when the arm is at rest, with one exception. When he makes a movement elsewhere, there is often an associated movement of the left arm. The arm is rotated inwards, extended at the elbow, flexed and pronated at the wrist, and flexed at all the phalangeal joints; Individual movements of the arms, hands, and legs seem fairly well done, except (dorsal) extension of the right foot. Passive (dorsal) extension of the left foot reveals a slight constant rigidity. On attempting to walk, he walks with both feet inverted, and the right leg at times gives out. The left forefinger is usually kept clenched in the palm. Sensation, reflexes, and electrical reactions showed nothing unusual. There was nothing abnormal discovered in the movements of the face and eyes. He was referred to Dr. F. H. Hooper, who found a narrow, high-arched palate, and a mass of adenoid vegetations in the naso-pharynx, which were removed, relieving the drooling considerably. In September he had a convulsion, which his mother attributed to indigestion. In October his general health was better, and he got about better. In October there was considerable inco-ordination of the left hand and a little of the right. The left hand was fairly strong. The gait was unsteady, the right foot being twitched after him. The associated movement above described persisted, and he still drooled somewhat. He crept rapidly, jerking his legs under him, and throwing his feet up in the air. January 4th, 1888, the condition was practically unchanged. He was beginning to walk a little, and his movements were less irregular and stronger. The inco-ordination and associated movements persisted. Some months later I received a letter from the family physician, telling me that the child had had more convulsions, still attributed to indigestion.

Observation II. Grace S., seven years. First seen May 11, 1887. Family history negative; first child. The labor was protracted and difficult, lasting from Tuesday until Friday. Forceps were used; the head after delivery was out of shape, and for some time there was a great question about resuscitating her. Her physician told me that she was nearer dead than any child he ever saw that recovered. She was always a large, fat child. At six months she had diarrhœa, and after that she could not sit up like other children. She sat alone at two, crept at three and a half, talked at four, and began to walk alone at five. About two years ago she began to have attacks at night, in which she became rigid, moaned, and frothed at the mouth, the arms twitched, and the right arm shook. After this she could not keep still. She never had more than twelve of these attacks. Her left side has always been the most affected, and she can use the left arm but little. When she does not feel well, the left hand will sometimes open and shut involuntarily. She is reported to be unusually bright in many ways, to have an excellent memory and a large "bump of order." She notices quickly, and likes to help about the house. Lately, for no reason that she can give, she cries when left alone. She now sleeps well, but until she was three or four years old she slept very little, waking and screaming, apparently from pain. She talks a great deal, although her speech is nasal and very indistinct, but she understands what is said, and never uses the wrong word. She drools constantly, and takes cold easily. She breathes through the mouth, which is constantly kept open. She can swallow only liquids and soft food. When about five years old she had massage, after which she began to walk. The child is well-nourished and well-developed, the left arm being a little larger than the right. The left parietal region is more prominent. There is right external strabismus. The open mouth and the constant drooling give the child the appearance of an idiot. The right disk is smaller, and there is a lack of pigment, but no vascular changes. She can move the left arm but little, and the hand hardly at all, and the movements of the right hand are uncertain and not co-ordinated. The left arm is rigid, and kept rotated inwards and carried a little backwards, hyper-extended at the elbow, flexed and pronated at the wrist, and the fingers flexed over the thumb, which is between the fore and middle fingers. This rigidity relaxes somewhat at rest, but is heightened by any attempt at motion of either arm, or by excitement. Motion of the left hip and knee is fairly good; at the ankle there is slight motion, but the foot is held with some rigidity in equino-varus. The gait is peculiar; she walks on the left toe, the foot being inverted, and the left leg is weaker, giving out occasionally; the right foot goes first, and the left leg is dragged after it, crossing the right, while the body is thrown forward at the hips, and progress is toward the right. On exertion or excitement there is also some rigidity of the right leg. She uses the right hand very slowly and awkwardly to pick up things, and the effort brings on associated movements in the left

side,— either the spasm of the arm above described, or a similar spasm, except that the hyper-extension of the elbow is replaced by semi-flexion, or the hand is opened. The toes of the left foot are also extended (dorsally) and the inner edge of the foot is turned upwards — a form of associated movement to which Strümpell[4] has called attention. There is also great inco-ordination of the left hand, which she cannot open herself; but at times it opens on associated movements. When opened passively, the hand shuts slowly. There is less loss of power than inco-ordination. The tongue is protruded with difficulty. The knee jerks are little, if at all, exaggerated; there is no ankle clonus; the other reflexes and the electrical reactions show nothing unusual. As in the former case, Dr. Hooper found adenoid growths, which he removed, causing a marked improvement in the drooling, speech, swallowing, and general expression; the child ceased to look like an idiot. Massage and light gymnastics have aided the other conditions somewhat.

Observation III. M. L., female, six. Seen with Dr. Boland, of South Boston, October 7, 1886, and January 22, 1887. No nervous heredity could be discovered, and the family history, so far as known, is good. The child has been in the charge of a very intelligent woman, who has observed her with great care. During pregnancy an unsuccessful effort was made by the mother to induce an abortion, which she now thinks the cause of the child's condition. Labor came on at term, without any accident. For the first nine months the child is said to have cried most of the time. At no time has there been a history of any illness more than the ordinary complaints of childhood. Since nine months of age, she has been in her present condition of constant muscular rigidity. She is unable to stand without support, but when held up by the arms she can bear most of her weight on the feet, although she says her left leg is "n. g." (no good). Examination showed a dislocation of the left hip, probably congenital. She presents no deformity or muscular atrophy; the muscles are well developed, and even slightly hypertrophied. Her nurse states that at times the muscular rigidity ceases for a minute, and she becomes more limber. The rigidity is greater in the morning and in bad weather. She can neither stand nor sit, but either lies on the floor or is slung by the arms to a spiral spring in the doorway, which she enjoys very much. Any movement, touch, or excitement exaggerates the spasm. At times she has crying and screaming spells. She can move her head very well, and can roll over. She will not stay on her back, and can be put there only with difficulty. If put on her back, she rolls over to the left side with some difficulty, and gets on her belly, which is almost the only voluntary movement, except of the head, which she makes She does this when told to, as well as at other times, but the reverse process, from the belly to the back, cannot be performed. She sleeps on her belly, turning her head to the left, so as to lie on the right side of her face. During sleep she is very apt to raise the left arm from the bed, letting it fall with such force upon her face as to hurt herself, so that her nurse ties that arm to the side of her crib. At times she gets a little blue about the lips. Except for occasional attacks of diarrhœa she seems well, and makes no complaint. She eats and sleeps well; she has perfect control over her sphincters. Mentally she is said to be unusually bright. Her speech, however, is very indistinct, so that it can be understood only with difficulty. The trouble, however, is purely one of motor inco-ordination, for she talks readily, and always uses the proper words. Her disposition is remarkably sweet, and she is, except when she has a crying spell, of a very sunny and even temper. She has not been taught to read, but her memory is very good. She learns the words of little poems in her picture books on two or three repetitions; she enjoys music, catches the words and airs of the popular songs of the day, and can sing them herself in good tune and time. She knows and can name and distinguish the ordinary colors, takes a lively interest in what is going on about her, remembers me and calls me by name after three months. She enjoys watching the people on the street and the distant landscape, and seems to appreciate the beauty of a sunset. She is docile and obedient. The child is well developed, well nourished, the muscles a trifle hypertrophied. There is dislocation of the left hip. The vision is good, the pupils react to light, and the field of vision and ocular movements are normal. She keeps the mouth open, but can close it, and she does not drool. The tongue can be moved naturally in every direction. She has a habit of raising and lowering the under jaw rather stiffly, and of nodding the head slowly, especially when talking or excited. She can twist her head and shake it from side to side, but, as a rule, keeps it pretty well back. The body is kept rigid, the arms extended in the crucifixion attitude, her legs rigidly extended, the feet extended, inverted, and in (plantar) flexion,— the spastic position. On lifting her up and requesting her to touch an obj ct, she seems to have a little power to move the arm backward from the plane of the body, but this, and the rolling over on to her belly, are the only voluntary movements, except of the head, which she can make. She never keeps her arms by her side. If anything is put into her hand the fingers close round it tightly, but without any voluntary action on her part — much as a little baby will grasp your finger. The entire body is kept in a ramrod-like rigidity, so that if you want to make her sit up, you must double her up by force, like a spring-bladed jack-knife, and hold her in position, so that she will not straighten out again. This same resistance to passive motion is noticed in all the muscles. At times she is limber enough to be made to bend the hips comfortably to sit in her nurse's lap, but any excitement or touch brings on this ramrod-like rigidity. Any attempt at passive motion is resisted with great strength. At times, however, the limbs seem to move, independently of the will, in a very awkward fashion, although with considerable power. The foot, for instance, is everted, the arms move, the legs are drawn up, but none of these movements can be performed by the will, and they all show marked inco-ordination. The sensation is normal. The muscular spasm was

[4] A. Strümpell. Ueber einige bei Nervenkranken häufig vorkommende abnorme Mitbewegungen im Fusse und in dem Zehen. Neurolog. Centralblatt, 1 Jan., 1887.

such as to render any attempt to test the reflexes nugatory. The same may be said also of the electrical tests, although it was possible to get a response from the deltoid to the faradic current. The application of the poles elsewhere produced such an exaggeration of the spasm as to prevent the reaction.

In these three cases we have a cerebral infantile paralysis — a double hemiplegia in the last, — with a rather definite group of motor disturbances. The cases differ markedly, of course, from the forms of hemiplegia with late contracture and atrophy which I reported in my former paper.

This form of motor disturbance is unlike athetosis or post-hemiplegic chorea in that the spontaneous movements are rare; the phenomena are excited wholly or chiefly by intended movements, and the characteristic athetoid or choreic movements are absent. It differs moreover from the post-hemiplegic ataxia of Grasset[5] in that other elements beside ataxia go to make up the picture. In Observation I., for instance, we see first a tonic spasm of the paralyzed side, increased by excitement, by efforts to use the affected side or even the other side, thus coming under the heading of a true associated movement. In Observation II. the character of an associated movement is so pronounced that we even find special forms of it described by Strümpell. This tonic spasm is certainly akin to the contracture of ordinary hemiplegia, yet it is, if I may be allowed the expression, more "active" than contracture, and less fixed in its type. In late contracture, there is a passive, fixed shortening of the muscles, which does not vary; this, on the contrary, resembles more the active contraction of voluntary movement. In addition to the tonic spasm and the associated movements, there is also, in Observation I. and II., a distinct loss of the power of co-ordination. In Observation III. the spasm predominates; associated movements are thrown so far in the background as almost to escape notice, and the spasm has so far overcome any volitional power over the muscles that incoordination is also a subordinate factor.

This symptom-complex — tonic spasm, associated movement, and inco-ordination — although, of course, merely one of Greidenberg's "mixed forms," seems to be a fairly distinct type of post-hemiplegic disturbance of motion. It is not very uncommon, and in my search through the literature of the subject I have found various cases reported under the headings of chorea or athetosis, notably by Fletcher Beach,[6] and also by Clay Shaw'[7]—"imbecility with ataxia." Gowers, moreover, has described a form of slow, mobile spasm following hemiplegia which is closely akin to this. As he first described it,[8] the spasm was involuntary, but it was exaggerated on motion. Since then he has given a fuller description.[9] "The most common form is that in which there is tonic spasm, slowly varying in relative degree in different muscles, and thus causing slow, irregular movements, chiefly conspicuous in the hand, and slow, irregular inco-ordination. From this character it may conveniently be termed 'mobile spasm.' It is commonly conjoined with more or less permanent rigidity, which tends to fix the limb in a certain posture." This spasm may cease during rest, but it is renewed by any attempt at voluntary movement, which is disordered by the spasm, being rendered ataxic or inco-ordinate. With this slow, mobile spasm are often associated other involuntary movements, which may persist when the limbs are at rest, and may assume the character of athetosis or chorea. This type differs somewhat from the type I have described in being apparently more variable, and in having less associated movement combined with it.

Of the pathology little can be said. Gowers thinks that his "slow, mobile spasm" is especially common in those cases of meningeal hæmorrhage which he calls[10] "cerebral birth palsy," but certainly it cannot be regarded as pathognomonic of a hæmorrhage, as the evidence of difficult parturition is lacking in some cases. I am not disposed to regard this condition as having any localizing character, not even as pointing to a lesion near the thalamus. In Observations I. and II. I am disposed to think the lesion was cortical, but I have seen this tonic spasm with inco-ordination as a transitory symptom at times in cases of ordinary chorea, where the symptoms were unilateral. I think that the most that can be said at present is that this "mixed form" of tonic spasm, inco-ordination, and associated movement, like most if not all of the other forms of post-hemiplegic disturbances of motion, points simply to a lesion of the pyramidal tract which either deranges the initiation of movement in the motor centres, or impairs the conduction of the motor impulse in the nerve fibres.

[5] J. Grasset. D'une variété non décrite de phénomène posthémiplégique (Forme hémiataxique). Le Progrès Médical, 13th Nov., 1880.
[6] Fletcher Beach. On Cases of Athetosis. British Med. Journal, 12th June, 1886.
[7] T. Clay Shaw. On Athetosis, or Imbecility with Ataxia. St. Bartholomew's Hospital Reports, ix. 130, 1873.
[8] W. R. Gowers. On "Athetosis" and Post-hemiplegic Disorders of Movement. Medico-Chirurgical Transactions, lx. 219, 1876.
[9] W. R. Gowers. A Manual of Diseases of the Nervous system, ii. 79, 1888.

INTRA-UTERINE FŒTAL DEFORMITIES.[1]

BY JOHN G. BLAKE, M.D.

THE child whose photograph is shown is the eighth in the family. He is eleven months old, has always been healthy and robust, and is well developed, with the exception of the arms. His brothers and sisters present nothing abnormal in development. The birth of the child was perfectly natural, of moderate duration, and presented no features of interest. The case occurred in the practice of Dr. C. C. Street, of Boston.

No bands of lymph were found attached to the deformed extremities, and no portions of the missing members were found in the membranes. Dr. R. H. Fitz very kindly examined the child, and has sent me the following note in regard to it: —

18 Arlington Street.

DEAR DR. BLAKE: — I have seen your patient, and examined the infant as thoroughly as possible. The child appeared intelligent, and well formed, excepting in the upper extremities. The right was represented by a stump, movable at the shoulder, apparently consisting of a single bone, flattened at the free end. The skin covering the latter bore a ruffle-like projection.

The left upper extremity apparently consisted of

[10] W. R. Gowers. Clinical Lecture on Birth Palsies. Lancet, 14, 21 April, 1888.
[1] Read before the Obstetrical Society of Boston, October 13, 1888.

an arm, fore-arm, and two fingers; all stunted. It was movable at the shoulder and a second joint below suggested an elbow. The fingers grasped firmly. It was impossible to determine the nature of the bone or bones of the lower part of this deformed extremity. Förster calls it a perobrachius.

The mother stated that the attached end on both sides had grown since birth, and that on the left the upper segment grew more rapidly than the lower.

The concurrence of the arrest or modification of development at the two sides is interesting as suggesting a common cause. If this be admitted, the case would oppose the view that the deformity on the right was the result of an intra-uterine amputation from the cord or a band, since the deformity on the left cannot be thus explained. Yours sincerely,

R. H. Fitz.

The first explanation of the congenital absence of some portion of an extremity is furnished by Haller,[2] the deformity being attributed to an arrest of development. He fortified this theory with the assertion that the parts lacking were not found escaping from the fœtal membranes.

In 1812 Chaussier reported cases, and in one instance the separated portion of an arm and hand was found. He considered this to be an amputation in utero, and originated the theory of gangrene to explain the phenomenon.

Montgomery,[3] with an interest in the subject, fortunately observed a case, where, in a five months' fœtus, cords or threads of tissue ligatured the hands and ankles. This established in Montgomery's mind the agency of threads, or cords, of tissue in spontaneous amputation, and later he published an elaborate essay containing many cases supporting his theory.[4]

Sir J. Y. Simpson upheld Montgomery's theory, and collected several cases; he suggested that fracture might cause an amputation, and at times the umbilical cord might be an efficient agent.

Later (1850), Martin asserts his belief that violence from some "external cause" must operate to render an amputation complete; but Montgomery combats this view, averring that the bones in their semi-cartilaginous state could be easily and completely divided by constricting bands. Still several cases reported seem to show that injuries to the mother during pregnancy are active in causing congenital deformities.

Gurlt[5] asserts that the bands or threads have their origin in the fœtal development; they are prolongations of the egg-membrane, whether from the navel-bladder or amnion.

In 1862 Virchow advanced the view that an inflammation of the undeveloped limb gave rise to a cicatrix, which by contracting prevented the development of the part. Simonact modifies Montgomery's view by assuming that pressure of the constricting band is followed by ulceration; a cicatrix resulting from this contracting amputates the member. But Mundé[6] says the evidence that intra-uterine amputation by bands or threads occurs cannot be gainsaid.

In the same article a good summary of the theories is given as follows by Mundé: —

a. Arrest of development.
b. Gangrene.
c. Detachment by means of ligaments; detachment by means of amniotic bands.
d. Constriction in consequence of cicatrices produced by dermatitis.
e. Fracture.
f. Arrest of development through cicatrices of inflammatory origin.
g. Constriction through the umbilical cord.
h. Abnormal shortness of the cord.

The pathology of spontaneous intra-uterine amputations has not yet been demonstrated satisfactorily.

The umbilical cord is not infrequently a constricting agent; but no case is reported where a complete amputation is proved from this cause. Even if complete amputation did occur, little evidence could be found pointing to the funis as the cause. The rule is, in these cases that interference with the circulation of the umbilical cord causes the early death of the fœtus, as most amputations occur in the early months.

The origin of the threads of tissue is explained by Montgomery by supposing that, as a result of inflammation at any joint, lymph is thrown out and becomes organized, taking the form of threads, as it is known to do in other situations.

Gurlt's view of the amniotic origin of the bands was made more complete by G. Braun in 1854, who believes that the small amount of liquor amnii allows the amnion to come in contact with the fœtus. Adhesions then form, and, with the growth of the embryo, a fold of amnion is drawn out, becoming later the amputating agent. According to Hager,[7] Rokitansky, Schaller, Hecker, and Fürst hold this view.

Noeggerath[8] speaks of amniotic bands as un-

[2] Elementa Physiologicæ Corporis Humani, 1778.
[3] Dublin Journal of Medical Science, vol. i. p. 140.
[4] Essay on Spontaneous Amputation of the Fœtal Limbs in Utero.
[5] Med. Zeitung, Jan., 1883.
[6] Boston Med. and Surg. Jour., July, 1839.
[7] Drei Neue Fälle von Spontan-Amputation, 1879.
[8] Am. Jour. Obst., N. Y., 1872, iv. 727.

doubtedly the cause of a partial amputation described. The bands were the result of more or less circumscribed inflammation of the amnion, from which there had been an exudation. The fœtal member, being in contact at the time, became agglutinated, and the exudation organized and contracted.

Mundé[9] gives the result of a microscopic examination of the remnant of a band of tissue; this consisted of "young fibrous tissue (fusiform cells) intermingled at intervals with epithelium." This, Mundé says, speaks for its amniotic origin.

In the process of amputation the growth of the fœtus drawing the bands tight, and possibly contraction of the band, gradually constrict the part ligatured. The parts pressed upon, muscles and bone, atrophy, and the extremity below the ligature ceases to develop or is stunted. The skin is carried inwards all the while, and finally the limb separates; and in some cases at birth a granulating surface exists at the end of the stump, while the other cases show a scar at the bottom of a dimple in the same situation.

The cases recorded embrace a great variety both in the situation of the amputating bands, and in the part or parts amputated. In order of frequency the parts ligatured are, first, fingers and toes, then the forearm and leg, and lastly the upper arm and thigh. The bands may run from any part of the fœtus to the amnion, or between any two points of the fœtus. The latter arrangement Montgomery considered an argument against the amniotic origin as claimed by Gurlt. The extreme to which amputation may go is shown in the cases reported, where all extremities are truncated, the arms near the shoulders, and the thighs at the pelvis. In one instance[10] of this kind the child lived, and was expected to reach an age when artificial extremities could be applied. None of the missing extremities were found in the secundines in this case, a failure not at all rare. The explanation given is, that the amputation occurs in early fœtal life, and the soft tissues may then be dissolved in the liquor amnii.

Simpson claimed that nature at times attempted repair, and cites cases that show rudiments of fingers on the stump, five little nodules with minute nails in a row existing in one case.[11]

Other rare cases show well-formed fingers on the stumps. One case[12] is described where both arms were amputated; but there was one finger with four phalanges on right shoulder, and two fingers on the left stump. Sometimes other deformities, as club-foot or hair-lip, exist in a case of intra-uterine amputation, but not as a rule. Neither does any law of heredity operate.

As between arrest of development and amputation, where a part of an extremity is lacking at birth, the former idea has hardly been recognized since Haller's time, as finding illustrations in the class of cases considered. When the part is completely absent, no rudiment existing, and the bones and tissues are apparently normally developed to the line of loss, the inference is that the parts beyond once existed, but were lost by amputation. Add to this the presence of a scar, usually dimpled, and the evidence accumulates: and when the missing part is found at birth, no question can be raised as to the process.

My thanks are due to Dr. W. E. Paul for his kindly assistance in the preparation of this paper.

[9] *Loc. cit.*
[10] Med. Times and Gaz., Lond., Dec., 1853.
[11] Month. J. M. Sc. Edinb., 1848, viii. 890.
[12] Gatly. Lond. Med. Gaz., 1851, N.S. xii. 627.

RECENT PROGRESS IN DERMATOLOGY.

BY G. H. TILDEN, M. D.

ALOPECEIA AREATA; CONTAGIOUSNESS OF ALOPECEIA AREATA; ERYTHEMA NODOSUM COMBINED WITH PURPURA AND CUTANEOUS GANGRENE; CUTANEOUS ERUPTIONS OBSERVED IN MALARIA.

IN an interesting communication[1] upon the pathology and treatment of alopeceia areata presented before the last International Medical Congress, Robinson, after mentioning the various theories with regard to its pathogenesis, sums up the results as follows: "While, therefore, the upholders of the parasitic theory have not definitely proved anything, although the course of the disease and the results of treatment favor this view, the defenders of the neurotic theory have shown that hairs can fall out from injury to cutaneous nerves, and that the manner of falling out and the shape of the bald patches may resemble very much that of alopeceia areata as ordinarily encountered."

He then gives the results of his own investigations with regard to the etiology and histology of the disease. These consist in the microscopical examination of portions of affected skin removed from the scalps of seven individuals. The duration of the disease in these different cases varied from one week to several years, and the clinical characters from a rapidly disappearing to a permanent alopeceia.

The first specimen was taken from a recent case of one week's standing, which subsequently recovered within four months,—an acute case. The epidermal layers of the skin were normal. The papillary layer of the corium was but slightly altered, some of the papillæ only, showing evidence of slight inflammatory changes. In the corium proper, beneath the papillary layer, there were evident signs of inflammatory processes, shown by a marked embryonic cell infiltration situated around dilated blood-vessels. This cell infiltration was not general throughout the corium, but was limited to certain areas. There were no signs of special serous exudation, the changes resembling those observed in a small-celled infiltration such as occurs in chronic interstitial nephritis. As a rule the inflammatory changes were not more marked around the cutaneous follicles than elsewhere. The connective-tissue corpuscles were more distinct than usual, and there seemed to be an active proliferation of them in many places, a so-called formative inflammation. The subcutaneous tissues were normal. Where the embryonic cell infiltration existed to any extent, the blood-vessels were dilated and some of the smaller arteries contained a fibrinous coagulum. Some of the lymph vessels were also dilated and contained similar fibrinous coagula. The hair follicles were either empty or contained normal or lanugo hairs. In some cases no hair papilla was found, the contents of the lower parts of the folli-

[1] Transactions of the International Medical Congress. Ninth Session, 1887. Vol. iv. p. 241.

cles consisting of epithelial cells devoid of pigment, the cells forming a small hair-shaft, a lanugo hair, further up in the follicle. In other hairs and hair follicles nothing abnormal was found. Some of the hairs showed signs of interference with nutrition, such as splitting up and fibrillation of the shaft. The anatomical changes consisted therefore in "a mild inflammatory condition of the corium, especially of the upper part and occasionally of the papillary portion; a small-celled, perivascular infiltration and connective-tissue corpuscle proliferation; a falling out of the hairs and their replacement by lanugo hairs; and, finally, coagulation within some of the blood-vessels and lymph channels."

In another acute case similar changes were found. In a third instance of six months' duration, where fully one-half of the hair of the head had been lost, the histological changes were of a similar kind but more marked in degree, the inflammatory processes being more extensive and severe. None of these patients had used any local applications to the scalp, yet in each the inflammatory changes were distinctly visible in the corium, while the epidermis was normal. Where lanugo hairs existed, the hair papilla was absent, or only an indication of its existence could be detected, the lower part of the follicle being filled with epithelial cells, corresponding to those of the external root-sheaths and the slight hair-shaft commenced to be formed high up in the follicle. All the lanugo hairs seen in this disease had their origin in this manner, and probably continue to be produced so long as the external root-sheath is composed of well-formed epithelial cells. In the author's opinion, if this observation is correct, an absence for any length of time of hair of any description would indicate atrophy or destruction of the hair follicle, and in consequence permanent alopecœia.

In two instances where the disease had existed for years, the same inflammatory changes already described were observed, but to a greater degree, and in addition there was thickening of the walls of many of the blood-vessels and atrophy of others. In some vessels the lumen seemed almost closed, while the walls were several times thicker than normal. In both cases there was thinning of the epidermis and diminution in the size of the epidermic cells. In one of these cases, which eventually recovered, the sebaceous glands were as a rule particularly well developed; in the other case, which remained bald, more or less degeneration was frequently noted in some of these glands, while others were unaffected. In another case, where permanent alopecœia had affected almost the entire scalp for years, sections of the skin showed more or less atrophy of all the structures except the walls of the blood-vessels, degeneration of many of the sebaceous glands, and in the hair follicles, where the pathological processes had advanced to an extreme degree, there was shrinking and atrophy of the follicle sheaths, thickening of the basement membrane, and entire disappearance of the hair papilla, no structures remaining from which a hair could be formed. In follicles showing an earlier stage of this process of degeneration, the follicle had lost its usual form, the papilla was still normal as regards shape, and pigment was deposited in it, in irregular masses, while between the papilla and the epithelium lining the follicle there was an empty space, the two being separated — the condition showing interference with the growth of the hairs from disturbance in the circulatory apparatus from which they derived their nutrition.

In all the specimens examined, therefore, there were found inflammatory changes, a round-celled infiltration of limited extent confined in great part to the perivascular region, with increase in the connective-tissue corpuscles of the parts. This inflammation was not especially perifollicular, only, as the glandular structures have a richer supply of blood-vessels than the tissue proper of the corium, the inflammation was often more marked around these structures. In the more recent cases there was coagulation of lymph in a number of lymph vessels, and coagulation of fibrin in the large and small arteries, and in the more advanced cases a thickening of their walls. As regards the glandular structures, only the hair follicles were affected in recent cases; in more advanced ones the sebaceous glands were also affected, and later on, slight but marked atrophy of all the cutaneous tissues was evident. The seat of the inflammatory changes pointed to a causative agent not acting especially upon the hair follicles, but in a more general manner throughout the corium, and the coagulation within the lymph and blood vessels denoted that this causative agent had not a central but a local seat. The pathological process is therefore an inflammatory affection of the corium, and not a disease primarily of the hair structures.

Joseph, in his experiments,[2] produced, by excision of spinal ganglia and portions of the posterior and anterior nerve roots, a falling out of the hair in animals, which was the result of simple atrophy of the hair structures; and he distinctly states that there were no signs whatever of an inflammatory character in the sections of skin taken from these areas of baldness. In Robinson's opinion, therefore, the process in the cases which were the object of his own histological examination was not the same as in the instances described by Joseph, namely, not a trophoneurotic process. Not being due to trophoneurosis, nor to a vasomotor disturbance of central origin, of which there is no evidence, the cause must be a local one; and with reference to deciding this point the author studied sections of skin taken from regions affected with alopecœia areata, with regard to the presence therein of micro-organisms.

The results of this examination were as follows. On the surface of the skin, around hairs and sometimes around the shaft, organisms were found which occasionally resembled the fungus of tinea trichophytina and tinea versicolor. In one instance micro-organisms were found apparently like those described by Von Sehler.

Upon staining sections from the most recent case, by Gram's method, and with the different aniline dyes, and decolorizing with alcohol, examination with the microscope showed in the lymph spaces of the corium, and in the walls of some of the small blood-vessels, small, round bodies arranged in groups and deeply colored. They were all about the same size, were arranged in groups and zooglea masses, and were unaffected by acetic acid or alkalies. The

[2] *Vide* Dermatological Report in this Journal of May 12, 1887.

majority were found in the lymph spaces of the middle part of the corium; a few were present in some of the papillæ, and occasionally they were found deep down in the corium. When these micro-organisms were studied by high powers, it could be seen that an arrangement in pairs was quite frequent. In a case of several months' duration similar organisms were found in similar situations, but were more numerous, being present both in inflamed and normal tissue, and they were especially to be observed in the corium, occupying the lymph spaces and extending by travelling through these channels. In two cases of several years' duration they were also found, but in much fewer numbers.

These micro-organisms are assumed by the author to be the local cause of the disease, the presence of which was indicated by the evidence of inflammatory processes in the corium. Their deep seat accounts, in his opinion, for the rarity of contagion in this malady and for its obstinate resistance to the action of antiparasitic remedies.

Behrend,[3] by the microscopic examination of hairs from cases of alopeceia areata, found that they presented a peculiar and abnormal condition, namely, the presence of air in their roots. That normal hairs contain atmospheric air has been known for some time, but in the case of normal hairs the presence of air is confined to the hair-shaft, above the follicle from which it grows. This phenomenon is explained by the fact that the young cells composing the hair-bulb are prickle cells, which, joined together by their spine-like projections, thus form intercellular channels, through which circulate the fluids which serve the nutrition of the hair. As soon as the growing hair, however, emerges from its follicle and comes into contact with the atmosphere, this intercellular fluid evaporates and the intercellular spaces become filled with air, while the epidermal cells composing the hair-shaft become cornified and dry up. Under normal conditions, the portions of the hair contained within the follicle, being cut off from contact with the atmosphere, are never found to contain air.

That air or gas can be generated in a hair-bulb, or can reach it from the blood-vessels of the skin, is an assumption most improbable in itself; and microscopic examination of these hairs showed that the air existing in the bulb had penetrated it from without, from the surface of the skin, and that its presence was due to evaporation of the intercellular fluids contained in the bulb.

This being the case, the question is, what changes in the relation of the hair-shaft and its follicle render it possible for the hair-bulb to come into contact with the atmosphere, and thus lead to evaporation of its contained fluids? An exact answer to this question is only to be given by further microscopic examinations of sections of affected skin; but Behrend is of the opinion that the changes found in the loosened hairs themselves, furnish grounds for some conclusions with regard to the nature of the pathological process in alopeceia areata.

Assuming that under normal conditions an evaporation of the intercellular fluids contained in the hair-bulb is prevented by its closely fitting hair-sheath, a loosening or detachment of the latter from the hair would enable such evaporation to take place. This condition of things was found to exist in the hairs examined, and in some instances the root-sheaths were found to be separated from the hairs to a point as far down as the bulb. The root-sheath was in these cases dried up, withered, and shrunken, being itself as well as the hair a victim of the disease.

The assumption of the author is, that the hairs and root-sheaths are alike subjected to a drying-up process, that primarily there takes place a separation of the root-sheath from the inner wall of the hair follicle, and that this separation is due to an interference with its supply of nutrition, namely, to some pathological condition affecting the blood-vessels of the skin, which is the essential cause of alopeceia areata. The quickly appearing, circumscribed and temporary reddening of the skin which is often coincident with the falling out of the hairs in the initial stage of the disease, also points to some such connection, and is not to be explained by the assumption of a purely tropho-neurotic origin of the malady.

[3] Virchows Archiv, vol. 109, part 3, 1887, p. 493.

ETIOLOGY OF ALOPECEIA AREATA.

At a meeting of the Academy of Medicine, in June, 1888, Leloir presented an address upon this subject concerning which there is at present much diversity and confusion of opinion. Leloir has seen during the past few years one hundred and forty-two examples of alopeceia areata. Of these cases ninety-two were under close observation for a length of time sufficient to render them useful as material from which definite conclusions could be drawn. The author divides them into three distinct classes.

I. So called alopeceia trophoneurotica. In this class he places all those cases in which there is to be detected no evidence of infection or contagion either in the patient himself or in his surroundings, but which, on the contrary, manifest characteristic neurotic phenomena sufficient to account for the occurrence of baldness.

In the thirty-six instances of this variety of the disease observed by Leloir, the baldness was developed in so-called neurotic individuals. Headache or neuralgia, more or less severe, often occurred before the appearance of alopeceia, and were generally confined to the side of the head which was affected by the latter.

Disturbances of cutaneous sensation, such as neuralgia, hyperæsthesia, or a feeling of numbness, sometimes preceded or accompanied the development of alopeceia.

In four cases of this class there could be detected a slight but distinctly marked cutaneous anæsthesia, situated in the regions affected by loss of hair. In several instances alopeceia followed a violent shock to the emotions, and this connection was so striking as to induce the author to include these cases among those dermatoses which succeed, and are apparently caused by, severe mental shock.

In three instances alopeceia followed injury to the head, and in one case universal alopeceia occurred in a patient who was suffering from locomotor ataxia.

A certain number of this class of patients had had syphilis, but the proportion was not so large as to suggest anything more than an accidental connection between the two diseases. In one instance

observed by the author, and in another mentioned by Fourier, alopecia of the occipital region preceded an outbreak of cerebral syphilis.

Leloir has had an opportunity to make microscopical examination of the peripheral and cutaneous nerves situated in regions of skin affected with this variety of alopecia areata. In one instance there was found parenchymatous neuritis of the cutaneous nerves; in another case, however, these nerves were entirely normal in appearance, so that, thus far, histological examination throws no definite light upon the subject.

II. In the second class, which includes thirty-five cases, the author places those examples of the disease which present no symptoms pointing to its neurotic origin, and in which no evidence of its infectious nature is forthcoming.

III. The third division made by the author, and consisting of twenty-one cases, includes those which after sufficient observation he feels obliged to regard as of infectious origin and contagious. The following instance is an example of this class of cases. A young man, twenty-six years of age, and in robust health, suffered for three months from alopecia of the beard. He consulted Leloir, since the baldness had affected the head also. A few months afterward he brought to Leloir his fellow lodger, who had developed during the past few weeks alopecia of the beard. Several months later on, the fellow lodger's mistress was attacked by characteristic alopecia areata of the scalp. The first mentioned patient had in the meanwhile gone to his home to pass the holidays, and the whole family used brushes and combs indiscriminately and in common. Some months after the end of the holidays the young man brought to Leloir his mother, brother, and sister, all suffering from alopecia areata.

With regard to the last variety of the disease, the author has made microscopic examination of the hairs and epidermal scales in ninety-two cases, and states that in no instance did he find a constant or definite form of pathogenetic micro-organism. He also inoculated ten guinea pigs, six rabbits, two dogs and five cats with the hairs and epidermal masses from regions of skin affected with alopecia areata, but always without result.

But of ninety-two cases of alopecia areata therefore observed with care, and for a length of time sufficiently long to warrant deductions therefrom, there were thirty-six instances of alopecia areata trophoneurotica, thirty-five cases in which neither a neurotic nor infectious origin could be determined, and twenty-one examples in which the evidence seemed to justify the assumption of an infectious origin. The clinical distinctions, however, between these different varieties of the disease are not yet evident.

CONTAGIOUSNESS OF ALOPECEIA AREATA.

In a lecture delivered before the dermatological section at the meeting of naturalists at Cologne, September 18, 1888, Eichhoff, after referring to Robinson's article upon alopecia areata, and to the addresses of Leloir and Besnier before the Academy of Medicine, upon the same subject, in all of which the probability of an infectious origin of the disease is advocated, gives an experience of his own which goes to demonstrate the contagious nature of the malady.

During the two years from April, 1884, to March, 1886, there was a sudden and notable increase in the number of cases of alopecia areata seen by him in practice. As a rule he had from four to six cases a year come under his observation; but during these two years the number seen was thirty-six cases, without any corresponding increase in his practice as a whole. These cases were all ones of undoubted and typical alopecia areata, great care being taken to exclude the possibility of confusion with tinea capitis.

Investigation with regard to the etiology of these cases showed that out of the thirty-six patients, ten were customers of the same barber, and had all noticed the appearance of the disease shortly after a visit to his shop. Two groups of seven and four patients came from the same neighborhood respectively. Three patients were affected with the disease after violent emotional disturbance; and in the remaining twelve instances of the disease no definite cause could be made out. After the barber in question had disinfected his brushes, combs, and various utensils, no more cases of alopecia areata occurred in that place. Since this epidemic the number of cases of the disease had dropped to the usual number of five or six a year in the speaker's practice.

From the above experience Eichhoff concludes that alopecia areata is not a pathological unit, a disease *sui generis*, but that it comprises at least two varieties, alopecia areata trophoneurotica, and alopecia areata parasitaria.

Unna, in a letter from Paris to the Monatsheft für prakt. Derm. (No. 13, 1888), relates the following instance of the transference of alopecia areata by contagion, as one of the most striking mentioned by Besnier. In one regiment there were observed eighty cases of this disease. Investigation showed that the officer whose duty it was to attend to the distribution of the uniforms and accoutrements among the men was affected with the malady. These men were all sent away and their helmets burned. One helmet, however, accidentally escaped destruction, and the soldier to whom this helmet was given was subsequently attacked by the disease.

ERYTHEMA NODOSUM COMBINED WITH PURPURA AND FOLLOWED BY ACUTE MULTIPLE GANGRENE OF THE SKIN.[5]

Demme has observed a severe form of erythema nodosum with unusual complications occurring in three boys and two girls, varying in age from three to eleven years. Three of these children were from the same family, which suggests a transmission of the disease from one to the other by contagion.

The illness began suddenly, as a rule, being ushered in by violent vomiting, delirium, and stupor. A rapid elevation of temperature to above 40° C. immediately preceded the appearance of a widely spread nodular erythema, which was situated mostly upon the legs and forearms. There was also developed severe pain in the extremities, in the elbows and ankles, but unaccompanied by effusion into the joints. Between the fourth and

[4] Monatsheft für prakt. Derm., No. 20, 1888

[5] Fortschritte der Med., 1888, No. 7.

sixth day of the disease there appeared numerous purpuric spots, attended in one instance with vomiting of blood and bloody evacuations from the bowels. In the two most severe cases there appeared also gangrenous spots in the skin, situated upon the numerous erythematous lesions, especially upon those situated in the neighborhood of the ankle and elbow joints. These first showed themselves as bullæ and pustules, which upon breaking down became surrounded by a grayish-yellow, irregularly jagged border, which itself was surrounded by a zone of hyperæmia. There soon developed a line of demarcation about the gangrenous process, and healing took place, the necrosed portions of skin becoming of a greenish-brown color, and being cast off.

In spite of the rapid exhaustion attending these cases, they all recovered. The whole course of the malady gave one the impression of a severe disease of an infectious nature, in which the development of nodular erythema was an essential feature and not merely an accidental accompaniment of some other pathological process. The fever, which was at first high and continuous, fell to a marked degree after the appearance of the erythematous eruption, while during the development of the cutaneous gangrene the temperature was subnormal as a rule.

Examination with reference to the presence of bacteria, discovered none in the blood, either in the circulation or in that effused into the skin; but in the tissue fluids of the intact erythematous lesions, as well as in the contents of the bullæ and pustules and in the patches of cutaneous gangrene, there were found micrococci and also bacilli arranged in groups. Pure cultures of these bacilli, when inoculated upon the abdominal skin of guinea pigs, produced a well-marked eruption of erythematous lumps, followed by gangrene and resembling the gangrenous process as seen in the cases described. Inoculation with pure cultures of the micrococci was productive of no result.

ERUPTIONS OF THE SKIN OCCURRING DURING THE COURSE OF MALARIA.

Retiwzew[6] makes an analysis of the cutaneous eruptions observed by him as occurring during the course of intermittent fever, in two thousand cases of the latter disease.

1. Roseola, which differed from typhous roseola in the fact that it very seldom became petechial, was seen in 2.5 per cent. of all cases.

2. A large macular form of erythema, which was localized principally upon the extremities, occurred in 3 per cent. Sometimes this erythema involved the whole surface of the body, and it was attended with itching and burning sensations. Occasionally a hæmorrhagic form of erythema was seen.

3. Urticaria occurred in 45 (4.5?) per cent. of all cases and soon disappeared. It was sometimes combined with erythema, but a hæmorrhagic form was not observed.

4. Herpes facialis was quite frequent, being noted in 22 per cent. of the cases. In one instance the author met with an herpetic eruption upon the palms of the hands and forearms, combined with purpura of the lower extremities.

5. Herpes zoster was seen in only one case.

6. Miliaria was encountered, but evidently was merely an accidental complication due to profuse perspiration.

7. The most common eruptions met with during the course of malaria were primary purpuric spots, purpura simplex; and hæmorrhages, which were usually complications of the severer forms of intermittent fever. These petechiæ were usually situated upon the chest, abdomen, and inner sides of the thighs, occasionally spreading over the whole body.

[6] Ref. in Vierteljahrerschrift für Derm. und Syph., Heft 2, 1888, p. 300.

Reports of Societies.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES M. GREEN, M. D., SECRETARY.

OCTOBER 13, 1888, the PRESIDENT, DR. WILLIAM L. RICHARDSON, in the chair.

DR. J. G. BLAKE read a paper on

INTRA-UTERINE FŒTAL DEFORMITIES.[1]

DR. LYMAN alluded to three cases of intra-uterine fœtal deformity which he had already reported. In two cases there was amputation below the elbow; in the third case, reported and figured in the Transactions of the Boston Society for Medical Improvement, January 13, 1862, two fingers were absent, and there was a cicatricial constriction just above one ankle. There was no arrest of development below the contraction; but there was no muscular development between the contraction and the knee. None of the amputated members were found; but the amputation probably took place early in pregnancy, and the parts were dissolved.

DR. ABBOT queried whether the rudimentary members in Dr. Blake's case might not be the analogues of the anterior limbs of some of the lower animals, like the seal, for example.

DR. SINCLAIR believed such cases as that reported were due to arrest of development rather than to amputation, and cited a case in one of the dime museums which had no arms, but did have rudimentary fingers at each shoulder. Dr. Jeffries Wyman had in his museum a human embryo which had gill-like openings on the sides of the neck: this went to prove Agassiz's idea of development, that is, that man may go back to earlier forms of animal life, as alluded to by Dr. Abbot. Perhaps, however, the rudimentary fingers were an expression of nature's effort to repair the loss.

DR. BROWN suggested that the rudiments of the missing bones might be present, but too small to appreciate.

DR. BLAKE said, in reply to a question by the president, that there was no known hereditary influence in his case. In Dr. Lyman's third case the deformity was obviously caused by a constricting band, which gave way in time not to stop all development or to cause amputation. His own case seemed to him inexplicable on the ground of constrictions by the funis or by amnictic bands, but rather to be an instance of arrested development from some unknown cause.

[1] See page 498 of the Journal.

NEUROSIS OF THE BLADDER.

Dr. Blake spoke of the case of a virgin twenty-eight years of age, of nervous temperament, and who had suffered great mental distress from various causes, who was afflicted with an almost constant desire to pass water. At night she was obliged to empty her bladder from five to fifteen times, and in the day time every fifteen or twenty minutes. There was more or less pain after the bladder was emptied, and there was some loss of power, so the urine would dribble away. No cause, other than the general nervous condition, could be found to explain the affeiction: no local lesions could be found in either uterus, urethra, or bladder. Galvanism, strychnia, and all sorts of local treatment had been tried without avail.

Dr Lyman had seen a similar case last summer. The patient, a young woman, had been sick for nine months, was pale and nervous to the last degree, and was unable to go about on account of an almost constant desire to pass water. There was cutting pain in the bladder after micturition: the urine was clear, contained no mucus, but was very acid. He prescribed twenty-five grains of acetate of potash every four hours, with suppositories of opium and belladonna: in ten days she was well. It was a case of irritable bladder from acid urine.

Dr. Abbot spoke of a similar case, in which the urine was intensely acid and contained mucus. He had prescribed bicarbonate of soda, and salol in five grain doses t.i.d., and the patient was well in a week. He had also found salol effective in cystitis associated with alkaline urine and rheumatism.

Dr. Blake remarked that in his case such a condition of urine did not exist, and he could find nothing to treat.

Dr. Davenport thought that in Dr. Blake's case it would be warrantable to make a vesico-vaginal fistula, and thus by relieving the bladder to give time to build up the general health, when perhaps the fistula could be closed. The fistula must be kept open by passing the finger through it every day for perhaps a month, after which time the edges cicatrize and the fistula remains open. It is of course necessary for the patient to wear a towel, and she is to some extent debarred from society. Chafing will by caused by the constant dribble of urine, unless the parts are protected by the use of ointments. He had watched the course of a number of these cases, and believed that cures effected had been permanent. A year is allowed to elapse before closing the fistula, and then only when a cure is apparently effected.

The President said that six or seven years ago he had a case similar to Dr. Blake's, in which he tried constant irrigation of the bladder with a stream of carbolized water, at a temperature of 100° F. during thirty-six hours: there was complete cure.

A CASE OF SPINA BIFIDA, WITH WEB-LIKE ATTACHMENTS ON ARMS AND LEGS.

Dr. J. Stedman reported the case of a young woman, one year married, who, when six months pregnant, suffered accidental rupture of the fœtal membranes. The patient was kept in bed, and the liquor amnii gradually drained away. Two weeks after rupture of the membranes labor came on: the fœtus had spina bifida, and the arms were attached to the sides, and the legs to each other, by a web-like membrane. The fœtus did not breathe, motion having ceased a short time before its birth.

AMERICAN ACADEMY OF MEDICINE.

Twelfth annual meeting, Tuesday morning, November 13th.

FIRST SESSION.

The Academy met in the governors' rooms of the New York hospital, the President, Dr. Frederick Henry Gerrish, A. M., M. D., of Portland, Maine, in the chair.

The deaths of the following members were reported: C. R. Agnew, New York; M. H. Borland, Pittsburgh; Howard Pinkney, New York; Theodore T. Wing, Susquehanna, Pa.; E. S. Dunster, Ann Arbor; Stephen B. Kieffer, Carlisle.

Leartus Connor, A. M., M. D., Detroit, Mich., made the

REPORT OF STANDING COMMITTEE ON THE REQUIREMENTS FOR PRELIMINARY EDUCATION IN THE VARIOUS MEDICAL COLLEGES OF THE UNITED STATES AND CANADA.

In speaking of the preliminary requirements, stress was laid upon the importance of a sound body. In no learned profession is the mortality so great as in the medical. Reference was made to the methods of determining whether or not the colleges fulfilled the statements made in their announcements. One of these was by means of decoy letters. This plan last year indicated that the majority of colleges fulfilled these statements. Another method of judging is by examinations of the graduates by disinterested parties as the army, navy, etc. Positive data are not at present available, but in regard to these examinations the principal deficiency seems to be in the preliminary education. The general verdict of editors is that the average doctor is lamentably deficient even in what is known as common-school education.

There are in the United States one hundred and sixteen medical schools. According to their announcements, eighty-nine exact certain educational requirements, but nineteen of these require no more than they can help. It is futile to endeavor to directly influence medical colleges to make these requirements. It can only be obtained by awakening in the mind of the profession and people a sentiment that a definite preliminary education is necessary to the medical student.

THE CAUSES AND PREVENTION OF THE OPIUM HABIT AND KINDRED AFFECTIONS,

by J. C. Wilson, M. D., of Philadelphia.

These affections are prevalent to a large extent, although we possess no reliable statistics concerning their frequency. The causes may be grouped under three heads. First, example, as shown in the case of those who become opium eaters through the example of friends. Second, suggestion, as is shown in those who fall into the habit through the reading of literature concerning it, or from familiarity with the drugs, as in the case of doctors, druggists, nurses, and students of medicine. A large proportion of individuals who are led by these causes to contract such habits do so in the absence

of sickness and physical pain. Third, medical prescriptions. It is an unfortunate fact that the greater number of the victims of habitual vicious narcotism become so through the prolonged abuse of narcotics originally prescribed for the relief of pain.

Among the measures suggested for the prevention of the formation of such habits were, first, the dissemination of a wholesome knowledge of the methods by which the opium habit and kindred affections are induced; of the serious character of these affections; and of the dangers attendant upon an ignorant and careless employment of narcotics. Second, a reasonable and temperate presentation of the facts in the popular works upon hygiene. Third, the exercise of every possible precaution on the part of physicians in prescribing narcotics. It is good practice to keep the patient in ignorance of the character of the anodyne used and of the dose. Physicians should personally control as far as possible the use of such drugs, and see that they are taken infrequently, and in the minimum amounts capable of producing the desired effect; the occasional alternation of anodyne medicaments is desirable. Prescriptions for drugs of this kind should not be renewed by druggists without the written order of the physician. Finally, a merely palliative treatment should not be allowed to assume too great importance in the management of curable painful affections.

Under no circumstances, except in the final stages of hopelessly incurable painful affections, should the hypodermic syringe be placed in the hands of the patient.

Uniform and efficient laws to regulate the sale of narcotic drugs are desirable. Existing laws relating to this subject are a dead letter; they are neither adequate to control the evil nor is their enforcement practicable.

DR. R. L. SIBBET, Carlisle, thought that the physician should not tell what he is giving when he prescribes opium. He also thought that we should never write a prescription in which the word opium appears.

DR. LEARTUS CONNOR, Detroit, considered it unsafe for the physician to administer a narcotic in his own family. He could give a large number of instances where the wives and other members of physicians' families had become addicted to the use of opium in this way. It is unsafe for the physician to administer opium to himself.

THE IMPORTANCE OF PRACTICAL OBSTETRICS IN THE COURSE OF INSTRUCTION GIVEN BY MEDICAL SCHOOLS,

by THEOPHILUS PARVIN, A. M., M. D., Philadelphia.

The science of obstetrics is admirably taught in our medical schools, by pictures, models, illustrations of various sorts, with preparations of pelves, etc., but the vast majority of American medical students graduate without having witnessed a case of labor. In many medical schools the diagnosis of pregnancy by auscultation and by palpation is not taught so that the graduate sees with his own eyes and feels with his own hands. There is also reason to believe that the mortality of private practice is greater than that of hospital practice. Then, too, the unqualified obstetricism contributes largely to the work of the gynæcologist. Whilst attendance on poor women at their homes is better than no practice at all, yet the student will derive more benefit from the study of cases collected in a maternity hospital, where many cases can be studied under the instruction of a competent teacher. The practical teaching of obstetrics is to be directly associated with its scientific instruction. There should, therefore, be a maternity belonging to every medical school in which obstetrics is taught. In large cities there would be no trouble in obtaining sufficient material for this method of teaching. Through the efforts of the author, the trustees of the Jefferson Medical College authorized the establishment of a maternity department in connection with the hospital. Thirty-four women have been confined without a death. The room being insufficient, an out-door department was established. Here there have been one hundred and fifty-one applicants; one hundred and six have been confined, with but one death. This occurred two weeks after labor. The cause of death was not positively ascertained.

The author then described the method employed at the Bavarian University, basing his remarks on a report furnished by Dr. J. Clifton Edgar. Obstetrics is there taught by (1) didactic lectures, (2) obstetric clinics, (3) touch courses, (4) operation courses on the phantom, (5) management of labor cases, (6) bedside instruction in the puerperal wards. The student is required to attend obstetrical clinics for nine months. In this time he would at a low average thoroughly examine eighteen gravid or parturient women, and deliver four women.

In concluding, Dr. Parvin said: "Why would it not be wise for this Academy, which should be a light and a guide to the American profession, leading it to higher and giving it larger views on those duties and responsibilities, with hearty unanimity declare that practical obstetrics should be made a part of the regular course in every medical college? With the seal of your approval, those who are laboring to this end will be given strength and hope. May the time soon come when every medical school upon the continent, which does not take these steps to make this necessary reform, shall perish under the common and condign popular and professional damnation."

Adjournment of morning session.

AFTERNOON SESSION.

DR. F. H. GERRISH, M. D., of Portland, Me., delivered the

PRESIDENTIAL ADDRESS.

Reference was first made to the necessity for something more than a mere grammar-school education as a preparation for the study of medicine. The course of a student without proper preliminary education was traced at length. Until recently any male of the human species, who would pay the necessary fees, found no difficulty in entering. A few years ago several medical schools established a preliminary examination. This was attributed by the speaker largely to the action of the Illinois State Board of Health, to the effect that if the schools wished their diplomas to be recognized in that State they must have a preliminary examination. He thought that the labors of the Academy

should be rather to elevate the standard of medical education, than the investigation of scientific problems.

The next portion of the paper was devoted to a consideration of the methods by which the membership of the Academy could be increased.

The President then referred to certain amendments which had been proposed at previous meetings. One of the amendments considered related to Article VIII. Section 1, which now reads: "The fellows of the Academy, in their relations with each other, and with their fellowmen, agree to be governed by the principles embodied in the present code of ethics of the American Medical Association, and by the constitution and by-laws of the Academy." The amendment suggested: "The fellows of the Academy will be governed by those principles which actuate educated, cultured, and honorable men in every profession, and by the constitution and by-laws of the Academy." The speaker favored the adoption of the amendment.

Never before had it been appropriate to address the Academy as "Ladies and Gentlemen," but to-day it was his privilege to use this significant expression. It is not creditable to our country, or in keeping with the liberality which theoretically characterizes our institutions, that a discrimination should so long have been made against women in scientific associations. It is noteworthy that some of the standard upholders of a strict preliminary examination, as ascertained by the detective work of our committee on the subject last year, were the schools managed by women.

Since the last meeting, the grave had closed over several members of the Academy, and the speaker spoke briefly of the various deceased members.

In order to facilitate the procuring of essays for the annual meetings, it was suggested that a special committee charged with this work be appointed. In reference to the Congress of American Physicians and Surgeons, he thought it advisable for the Academy to consider the expediency of associating itself with the other societies comprising the Congress, thus bringing it into more prominent notice than it has hitherto enjoyed.

The next paper was entitled

A FEW WORDS CONCERNING OUR ACADEMY,

by Dr. R. Loury Sibbet, Carlisle.

The Academy was organized in 1876, at a time when the standard of medical education was at its lowest point. Medical institutions were numerous, and their doors thrown open to all, irrespective of qualifications. At this time there were also at least a dozen of so-called diploma mills. It was at this period that the Academy began to explore these novel methods of manufacturing medical practitioners. The addresses by the President and the papers by the fellows have generally been on some branch of this semi-medical subject, and widely distributed among professional and educated classes. These addresses have also pointed out the true and only method by which men may become safe and honorable practitioners. The Academy has strongly insisted upon the necessity of preliminary education. At the time of the organization of the Academy there were in no State laws relating to the practice of medicine that could be enforced. Most of the States now have laws which can be carried out, and many have State boards of examiners. Graded courses have been adopted in the best medical schools, with preliminary examination and frequent written examinations. The "diploma mills" no longer exist.

The Academy is the only society in which an academic qualification is required. The Academy had set a high standard for admission, but he believed that the doors should not be closed against those eminent practitioners who, although they did not possess the degree of A.B., had pursued protracted courses of preliminary study in literary schools.

(To be continued).

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated meeting, October 15, 1888.

Dr. I. Adler read a paper entitled

SOME REMARKS ON AKROMEGLIA.

He said that in 1886 Marie first described a new affection to which he gave the name of akromeglia. This designation, which simply meant enlarged extremities, was not very satisfactory, but it had now been generally accepted, and in our present total lack of knowledge regarding the pathology of the disease, it would perhaps answer as well as any other. Since Marie's paper had appeared, several cases had been reported in Europe, but that now reported was the first ever known in this country.

The patient, who was present, was a native of Germany, female, thirty-four years of age and married, and first came under observation in February last, at the German hospital. Her mother had died from the effects of a fall, and her father was still living. She also had three brothers living, all in the enjoyment of robust health. She was strong and healthy, she stated, up to her eighteenth or twentieth year, the time of the onset of her present trouble not being very clearly remembered. She began to menstruate in her fifteenth year, but the periods were always very irregular, and at the end of three years disappeared finally. She thought she was about twenty when she first noticed that her feet would swell from time to time, although a bandage or tight-fitting shoe, she said, would always readily reduce the swelling. About this time she also noticed some enlargement of the submaxillary and other glands.

The patient was unable to give any exact history of the present abnormal growth. She was married in her twentieth year, and when she was twenty-three her wedding ring became so deeply imbedded in the tissues of the finger that it had to be removed with a saw. She suffered principally all along from pain in the back and weakness, and was also subject to frequent attacks of migraine. The pain in the back she attributed to a long ride, from the effects of which she never recuperated. She was unable to walk, and spent most of her time in a semi-recumbent position.

On looking at the woman, one was at once struck with the immense size of the head and the marked projection of the lower jaw. At the first glance it looked like a case of myxœdema, or one in which

there had been complete extirpation of the thyroid gland. The entire cranium was greatly enlarged, and the protuberance of the occiput was especially marked. The lower jaw was immense, and the tongue was greatly hypertrophied and flabby. There was no alteration in the teeth, except that those in the lower jaw were separated to some extent from each other; and the hair was abundant. All the lymphatics of the neck were greatly enlarged. On a superficial inspection there was an apparent lack of the thyroid gland, but a more careful examination, especially during the act of deglutition, showed that the left lobe and the isthmus could still be distinctly felt, although the right lobe seemed to be wanting. No trace of the thymus gland could be detected. The clavicles were markedly enlarged, especially at their sternal extremities. The ribs were also greatly enlarged, and beginning kyphosis and peculiar bulging shape of the chest, due to the costal hyperplasia, could be observed. There was comparatively little adipose tissue at any point. The bones of the arm and fore-arm all showed enlargement of the extremities, and there was some reason to believe that slight lengthening of the shaft had also taken place. The hands were immensely enlarged, although there was no deformity of the nails, as has been noted in some of the other cases of akromeglia. The muscles everywhere were flabby and atrophied. The skin was markedly hypertrophied, but remained for the most part soft and pliant.

The same general condition of affairs was found in the pelvis and lower extremities. The feet were enlarged even more than the hands, being simply colossal in size, and there was also enormous hyperplasia of the epiphysial regions and the patellæ in the legs. It was noticed that there was marked hyperæsthesia in all the hypertrophied parts, even slight pressure causing the patient to wince.

As regards the internal organs, a careful examination of the eyes with the ophthalmoscope failed to reveal any organic disease. Repeated chemical and microscopical examinations of the urine showed no evidence of any kidney trouble, and the red and white corpuscles of the blood were both found to be normal in number and appearance, although to the eye the patient looked anæmic. The heart and lungs and all the other organs, as far as could be ascertained, were entirely normal. The appetite was fairly good, but the bowels showed a tendency to obstinate constipation.

The electrical examination showed some departures from the normal. The resistance of the skin to the faradic current was enormous. Otherwise the cutaneous sensibility was not diminished. As regards the galvanic current, there was considerable diminution of electrical excitability, which was most marked in the peronei of both lower extremities. Still, there was no evidence of any degeneration going on in the nerves, and the want of electric excitability could well be explained on other grounds. There was evidence of well-marked psychical degeneration in the patient. She was described as having been a bright and lively girl, but she was now very dull and apathetic.

Dr. Adler then went on to make more general remarks on akromeglia, founded on the observation of European authorities. In most particulars, he said, this case coresponded very closely with those met with abroad, though there was one feature which was peculiar to it (being noted in none of the others), viz., the widespread hyperplasia of the lymphatics. As regards the post-mortem appearances in this affection, Klebs was the only author who had made anything like a satisfactory report. He had found a general hyperplasia of the connective tissue and marked proliferation of the blood-vessels. There was also enlargement of the various nerves, especially the ganglia of the sympathetic. In the brain he found well-marked hyperplasia of the hypophysis cerebri, and the question naturally arose whether there was any connection between the enlarged hypophysis and the enlargement of the nerves. Klebs was inclined to attribute the disease to the proliferation of blood-vessels, but this was purely fanciful and speculative, and at present the true pathology remained shrouded in profound mystery. As regards the matter of prognosis, this was not particularly bad so far as life was concerned. In Europe two of the cases, which had been first observed as long ago as 1867, were still alive. In some of the cases there were abnormal conditions of the heart. In most of them the thyroid gland was diminished in size or apparently wanting altogether; but in two it was markedly hypertrophied, and was no doubt diseased. Amenorrhœa was a constant characteristic of the disease.

DR. W. R. BIRDSALL expressed the great pleasure it afforded him to see this case, the first of its kind ever recorded in America. He did not think he could throw any light on the pathology, though there seemed to him to be some mysterious connection between akromeglia, myxœdema, and extirpation of the thyroid. He said that he had at present under observation a young girl suffering from amenorrhœa, who had developed some enlargement of the extremities of the phalanges of the hands, and to a less extent of those of the feet. It might possibly be an incipient case of akromeglia, but it was as yet too early to form a definite opinion in regard to it. As regards the electrical reactions in Dr. Adler's case, he thought we ought to be very guarded in drawing conclusions.

DR. ADLER said that it seemed to him that the hyperplasia in and about the nerves might of itself offer a sufficient explanation of the diminished electric excitability.

DR. A. L. CARROLL said that profound gratitude was due Dr. Adler for the most admirable clinical demonstration which he had given of his unique case. Ever since he had first seen an account of this new disease in the journals, he had been waiting in the hope that some one would find a specimen of it in this country, and it now afforded him extreme pleasure to have the opportunity of seeing the first case reported.

The question of treatment having been suggested, DR. ADLER stated that, in the total absence of knowledge of the cause of the disease, all treatment, so far as interference with its progress was concerned, was without avail. The patient was simply kept in bed, and her functions regulated as well as possible. The attacks of migraine to which he had referred could always be efficiently combated with antipyrine.

DR. J. LEWIS SMITH presented a

CASE OF INFANTILE HEMIPLEGIA WITH MARKED SPASTIC CONTRACTURE AND SLIGHT ATHETOID MOVEMENTS IN THE FINGERS.

The patient was a young girl of eighteen, in his service at Charity Hospital. She gave a history of scarlatina complicated with diphtheria and followed by general dropsy, at the age of seven. It was at this time, according to her statement, that she first noticed the paralysis of the left side of the body, from which she still suffered. About a year later the arm began to be drawn backward behind the body, and it could now be seen in that position, like a rudder, with tonic contraction of the extensor muscles, and the fingers thrown far back. Soon after the appearance of the paralysis, the patient began to suffer from epilepsy. The attacks were for a time of the nature of *petit mal*, but had gradually grown more severe, and now constituted *grand mal*.

Dr. Smith then read a communication concerning the case, prepared, at his request, by DR. M. ALLEN STARR, in which the latter gave a résumé of some of the latest researches by Seeligmeler and other authorities in regard to the condition here met with. In it he stated that all recent writers mention athetosis as a frequent complication of spastic infantile hemiplegia connected with epilepsy. In this condition club foot was apt to be present, as was the case here, and the patient walked on the toes. Such cases presented indubitable evidence of an irritation carried down to the spinal cord from the cortex.

DR. BIRDSALL said that these cases were mostly instances of infantile hemiplegia, and all that he had observed had begun before the age of ten years. There could be no question that Dr. Starr's explanation of the pathological condition was the correct one. There was a destruction of tissue in the cortical areas, by reason of which the impulses from the brain were transmitted irregularly, and not in a co-ordinate manner. The condition varied from the ordinary contractures met with in hemiplegics in there being more mobility, and it also differed from ordinary athetosis, in which there were more movements with but little contracture. Athetosis, as was now well known, was a symptom of hemiplegia, and particularly infantile hemiplegia. In infants, an athetoid condition of the fingers was normal, these members being constantly in motion, and the earlier the paralysis occurred the more marked would be the athetosis.

DR. DANIEL BROWN read a paper on

THE ARREST OF SECRETIONS IN THE ERUPTIVE FEVERS.

He took scarlatina as the type, and said that it was not so much the disease itself that proved fatal as the accidents and sequelæ liable to attend it. Unless the secretions could be kept in efficient operation, serious inflammations were likely to result from the congestion incident to the irritation produced by the poison in the system. He was in the habit of commencing his treatment with small doses of the bromides to allay nervous irritability, and of tincture of aconite to diminish the frequency of the pulse. In a short time he began the administration of carbonate of ammonia, which for the last twelve years he said he had regarded as his sheet anchor in the treatment, on account of its stimulating effect upon the secretions. The dose was a very small one, only one-half or three-quarters of a grain, and it was usually repeated every hour or so, in a solution containing elixir of cinchona. The skin was kept anointed with iodine, and at night he often gave small doses of calomel and jalap, as advocated by Prof. Wm. H. Thomson. Under this plan of treatment he found that the eyes or ears were seldom affected, and kidney trouble rarely occurred as a sequela. The treatment must be varied, of course, according to circumstances, but the chief thing he always had in view was the maintenance of the secretions.

DR. C. A. LEAH said that he would be very glad if he could find a remedy which would act as a preventive of complications and sequelæ. Carbonate of ammonia, however, he should think would only add another foreign element, and he believed that pure water would answer a better purpose in keeping the secretory organs free. The two great objects in the treatment were to eliminate and to sustain.

The President, DR. J. R. MACGREGOR, said that there were a certain number of cases of scarlet fever in which death resulted, not from any accident or sequela, but from the direct violence of the attack; the poison introduced into the system being so malignant as to promptly overwhelm the nervous centres and the powers of life like an avalanche. As regards the glandular system, there was always danger of trouble. For instance, in the kidneys, as the result of over-stimulation and over-action in eliminating a poison to which the organs were not accustomed, the epithelium of the glomeruli was apt to be thrown off, and in consequence of this, this tubular nephritis would result. In the zymotic diseases in general he thought other methods of treatment, besides those aimed at securing elimination, were often called for.

DR. BROWN said that he did not by any means claim that he could cure all his cases. He quite agreed that the malignant cases referred to did sometimes occur; but in these he believed that if only a few doses of such remedies as the bromides could be given to allay the nervous irritability produced by the poison, there would result a certain amount of improvement, even if the effect was not sufficient to prevent a fatal termination; while in others which would unquestionably prove fatal if left to themselves, death might be averted by the prompt measures adopted.

—Dr. J. B. Hamilton, supervising surgeon-general of the marine hospital service, it is said, has been appointed editor of the Journal of the American Medical Association, and is reported to be about to resign his present official position. He is a strong Republican, and will not present his resignation, probably, until after Mr. Harrison becomes president.

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THE TREATMENT OF DELIRIUM TREMENS BY STRYCHNINE.

To Luton, of Rheims, is due the systematic treatment of delirium tremens and alcoholism by large doses of strychnine.[1] Luton recommended doses of five milligrammes, one-twelfth of a grain, by hypodermic injection, or by mouth, these doses to be repeated twice or three times a day.

Amagat, by some curious experiments on hares, which were given toxic and even fatal doses of alcohol, found that all dangerous effects might be averted by giving to each animal, simultaneously with the poisonous dose of alcohol, one milligramme of strychnia.[2]

Dujardin Beaumetz has repeated the hospital experiments of Luton, with uniformly good success.[3] He says: "Since the communication of Luton, I have many times had recourse to this strychnine treatment in my wards at St. Antoine, and always with successful results. I administer the sulphate of strychnia in subcutaneous injections, and I begin, as does Luton, with a dose of five milligrammes, which I repeat in five hours; sometimes a third injection during the day is needed." Beaumetz, by experiments on animals, has found "that there exists, within certain limits, a real antagonism between the action of alcohol and strychnine, and vice versa."

In the *Bulletin de Thérapeutique*, 1885, vol. cviii. p. 177, there is a communication from Drs. Journet and Bounaud, in which they give favorable results from a series of trials in private practice of this remedy in delirium tremens. One patient took in the course of three days upwards of two grains of strychnine subcutaneously, not only with no toxic result, but with the most marked benefit, the insomnia, agitation, and delirium disappearing under the use of the remedy. Sleep was in some instances induced where opium, chloral, and other hypnotics had failed.

Lastly, in the current number of the *Bulletin*, October 15th, appears an article by a Brazilian physician, Dr. Manoel Ramos, "On the employment of strychnine in delirium tremens," in which he extols the effects of this remedy. He also has witnessed the superiority of strychnia over other remedies, notably opium, morphine, chloral, and paraldehyde in controlling the disordered manifestations of alcoholism. Hypodermic injections of strychnine, one twelfth of a grain, followed by hypodermics of morphine, one-sixth of a grain, in delirium tremens, have in some cases in his practice been followed by deep and prolonged sleep.

Dr. Ramos thus concludes his communication:—

"I believe, with M. Luton, that in chronic alcoholism there is inertia of the excito-motor properties of the spinal cord, which enables the patient to tolerate large doses of strychnine; in some cases as much as four cgs., nearly one grain, may be required. I believe that strychnine has in these cases a substitutive action on the nerve centres, thus antagonizing the excitant action of the alcohol. These centres are habitually over-excited by alcohol; when the stimulant fails, the troubles of the cerebrum cause delirium, and those of the cord, trembling; for we may say, with Torres-Hommen, that "delirium is the trembling of the brain, while trembling is the delirium of the spinal cord." It is necessary, then, to find another excitant. Morphine and other preparations of opium tolerably fulfil this indication, but better than all, and especially when opiates fail, are the large doses of strychnine.

[1] Bull. gen. de Thér., 1880, t. xii. p. 241.
[2] Jour. de Thér., 1876, p. 378.
[3] Bull. gen. de Thér., t. cvi. p. 1.

MEDICAL INSPECTION OF THE MASSACHUSETTS INSANE.

THE appointment of a medical man as inspector of the charitable institutions of Massachusetts — a position which involves so many possibilities for the improvement of our insane collectively, and therefore individually, calls for something more than the brief notice in our last issue.

Feeling confident of the advantages to follow this new departure, we do not need to await results before congratulating the medical profession, the general public, and especially the insane who are among the objects of this important advisory and supervisory department, on a distinct advance in lunacy administration in this State. This the appointment in itself implies by its recognition of the vital importance of medical inspection for the insane.

The ideal method of central administration, viz.,

through a paid Board of Commissioners in Lunacy, composed of prominent men in several callings, the medical predominating, seems unattainable with us; but we have much to be thankful for in having secured a physician, trained by practical experience in the hospital care and treatment of all classes of the insane, as the agent and probably to a large extent the advisor of the Board of Lunacy and Charity.

Our dependent insane are blessed with asylums admirably administered and medically equipped. No men in the Commonwealth are better qualified to give advice on the larger questions of the disposal of patients of this class than are the superintendents of these institutions. In order to obtain for the State at large something of the judgment and administrative knowledge which is at present chiefly expended upon individual asylums by these medical directors, their hearty co-operation is essential, and this can best be had through the medium of an official who is a fellow-physician.

The problems to be solved, viz., the proper revision of our lunacy laws; the best disposal of our surplus insane in hospitals through suitable provision for the chronic class; the care of the criminal lunatics, the inebriate, the almshouse and boarded-out insane — questions understood in many respects but settled in none, — might daunt the most determined: but, as half the battle is in proper equipment for work, a medical man has necessarily great advantages, and we believe we can assure the new incumbent of a large share of professional encouragement and support.

ON SPECIAL SERVICE.

Very nearly twenty years ago a brilliantly aggressive member of the Massachusetts Medical Society asserted that specialists were the officers, and general practitioners the rank and file, of the profession. This sentiment was by no means heartily re-echoed at the time, the medical specialist being then a comparative rarity, and the "rank and file" largely in the majority. Nor has this assertion, it is safe to say, found more favor in the later years, although the specialists have greatly increased in number, — for, with the subdivision of labor, and the exploration of hitherto comparatively unknown regions of research, there has come a sense of interdependence and community of interest, which is a most valuable and wholesome thing in either an army or a brotherhood, and from which springs naturally an appreciation of the necessity for community of knowledge.

To carry out the military simile in another form, while the general practitioners constitute the main body and strength of an army, the officers of which are all promoted from the ranks, the specialists form a skirmish line of volunteers going out in different directions to explore, to gather information, and, most important sequence, to report back to the main body the line upon which it may, after corroborative investigation, with safety advance.

One of the duties, therefore, of the specialist, and particularly of the specialist with material for investigation at his hand, is *to investigate*, and another of his duties is *to teach*, in so far as the gift of teaching has been given him, to report as simply and as plainly as he can that which he has learned, since the knowledge which he has acquired is not his, but is held in trust as the property of that main body of which he is one of the rank and file on special service.

IMPROVED PROVISION FOR THE INSANE AT PROVIDENCE, R. I.

Not the least important work of the late Dr. William B. Goldsmith for the advancement of the standard of hospital treatment for the insane is to be seen in the new ward for men at the Butler hospital in Providence. This building, called, in honor of Dr. Goldsmith's predecessor, the John W. Sawyer Memorial Ward, probably as well represents to-day all that is desirable in hospital construction as any structure in this country.

The building is especially intended to accommodate patients of the class to whom association with large numbers of others is objectionable, if not injurious, and for those whose means enable them to pay for comforts and luxuries not commonly to be found in hospital wards. By its architectural arrangements such a classification of its occupants is provided for as will remove from it as far as possible the unpleasant features of asylum organization.

Through especially arranged apartments excellent provision is made for the treatment of acute or excited cases, while those suffering from the milder forms of mental disease, whose sensibilities are still keen, and whose appreciation of the comforts and freedom of home life is still active, are admirably provided for. Altogether this new feature of the Butler hospital is a gratifying evidence of the increasingly liberal tendency in the hospital treatment of the insane, and is well worthy the careful investigation of those interested, professionally or otherwise, in institutions of the class to which it belongs. The building was formally opened in June, 1888, and will doubtless serve, to a greater or less extent, as a model for the improved accommodations for those suffering from mental diseases which are demanded by the advances in medical science and a more enlightened public feeling.

THE SPREAD OF TUBERCULOSIS.

AT a meeting of the Society of Medical Jurisprudence and State Medicine held November 8th, Dr. G. J. Johnson read a paper on tuberculosis in animals, in which he expressed the conviction that nearly all human tuberculosis was caused by eating the flesh of animals or poultry, or drinking the milk of cows affected with the disease. While it was almost impossible to estimate the prevalence of animal tuberculosis, he believed that in a considerable percentage of all cattle the bacilli of the disease existed, and that the danger of putting upon the market the meat or milk from affected animals could not be over-estimated.

To substantiate his position Dr. Johnson stated that in the few countries where no cattle exist a case of tuberculosis has never been known among the inhabitants; and hence he claimed that if tuberculous cattle could be exterminated consumption would die out among men. In furtherance of this end he thought that the government should pay farmers liberally for killing all their affected cattle. The germs of the disease are no doubt spread to a large extent by the habit which is so common among the animals of licking each others' noses; the excessive discharge at the nostrils incident to the disease being filled with the bacilli.

In Europe this matter has already received considerable attention on the part of the authorities, and in Belgium the government had gone so far as to order that any calf from which vaccine virus is taken shall be killed and a post-mortem search made for tuberculosis in order that by no possibility may the disease be conveyed to those vaccinated.

In the discussion which followed the reading of the paper, Dr. E. F. Brush, who has made a special study of bovine tuberculosis, agreed substantially with the views of Dr. Johnson, but thought the danger from eating meat or drinking milk infected with its germs was not quite as great as represented by the latter.

MEDICAL NOTES.

IN MEMORIAM DR. JOSEPH SARGENT.

THE following minute was adopted at a meeting of the Worcester District Medical Society, November 14th: —

The death of Dr. Joseph Sargent is an event of marked interest and importance in the history of the Worcester District Medical Society. His conscientious devotion of great natural and acquired abilities to the service of this society during an unprecedentedly long term of membership, has given him a claim to our highest consideration and affectionate regard. And no less has the honor he has conferred upon our profession in this community, by a noble and exceptionally useful and honorable life, entitled him to a permanent and enduring remembrance. Every member of our society, and every member of the profession within the wide circle of his acquaintances and service will hold in kindly remembrance the genial friend, wise counsellor, and beloved associate; and those who may come after us will find no page in all our history more interesting and instructive than that which records his virtues and the story of his life.

Upon the privacy of that domestic circle, where the blow has fallen with a force that even those of us most intimate can scarcely comprehend, we have no right to intrude with any expressions of our sorrow; and yet, whether it shall come to the ear of the afflicted family or not, we can enter here upon our records an expression of that affectionate sympathy which springs spontaneously from a keen sense of the great bereavement they have been called to suffer.

— J. M. French, M. D., will contribute to the December *Popular Science Monthly* an article on "Infant Mortality and the Environment." Dr. French points out the chief causes of infant mortality, both those which are due partly to heredity and to the surroundings.

— "Dr." Hostetter, the millionaire patent-medicine maker of Pittsburg, Pennsylvania, died without leaving a will. The reason has just become known. A few weeks ago he made a will which contained a bequest giving Pittsburg a fine art gallery and mechanics' hall, to cost $1,000,000. Mr. Hostetter was bondsman for a city contractor, and a judgment had been rendered against him. An execution was issued on some of the doctor's possessions. He said he would willingly have paid the claim if the process had not been taken, but he was angered by this action on the part of the city officials, at once tore up the will and refused to make another. His bitters seem to have struck in.

— Cable dispatches to the daily papers announce that the wonders of the telegraph have just been illustrated by a consultation by land lines and cable between physicians in Victoria, B. C., and London, England. Lord Ennismore, heir to the English earldom of Listowell, is lying at the point of death in the hospital at Victoria with typhoid fever, accompanied by other complications. A telegraph circuit was formed from London to Victoria by the Mackay-Bennett cable and the Canadian Pacific Railway telegraph, and Sir Andrew Clarke, the distinguished London physician, was placed in direct consultation with Dr. Hannington in Victoria.

A conversation lasting three hours concerning

Lord Ennismore's condition was carried on. An unbroken circuit was worked from Victoria to the cable office in New York, where the telegrams were repeated to London. Replies were received in three and four minutes.

— Medical men, we think, are likely to feel a peculiar interest in one form of education of the brain which enables men to overcome a deeply seated instinct, namely, the instinct of giddiness in high places. We clip from a letter in the *New York Sun* a description of the work upon the Eiffel Tower in Paris: —

"The Eiffel Tower, after a three or four days' strike in September, is ascending rapidly. The height is now about five hundred feet, or one-half the total elevation. As it narrows gradually in its upward progress, the quantity of material to be hauled up to the dizzy working platforms becomes less and less. Besides, they have begun to employ a new system of machinery. Certainly, it is to me a wonderful spectacle to watch the squads of men suspended aloft on their narrow plank footing — some turning gigantic cranes, some blowing into a fierce blaze the furnaces in which they heat their bolts and other fastenings, while on all the four sides of the tower these hardy workers in iron are seen swinging their hammers, driving home the bolts that fasten uprights and cross-beams, with nothing beneath them, frequently, but a platform the width of two planks.

It is a fearful but a marvellous sight, this monumental tower, growing up, up, up till it surpasses anything ever attempted by human daring. How, high up in mid-air, far above the summits of the loftiest hills around Paris, these poor workmen will be able to continue their labors through the cold and snows of autumn and winter is a problem of human endurance, skill, and perseverance which I cannot solve."

— *The Quarterly Therapeutic Review* quotes Dr. A. Sharkhovski, writing in the *Russkaya Meditsina*, who strongly recommends hourly doses of salicylic acid or salicylate of soda in malignant scarlet fever, saying that since he adopted this treatment his mortality has been very greatly reduced, only three cases having proved fatal out of one hundred and twenty-five, all of them malignant, these three being cases were some other disease or bodily defect was present. The prescriptions which he gives are: Forty grains of salicylate of soda in six ounces of distilled water: a teaspoonful or a tablespoonful to be taken every hour according to the age of the patient. Or, better still, fifteen grains of salicylic acid in six ounces of hot distilled water and one ounce of syrup of orange. This does not deposit on cooling, and is not disagreeable, so that children take it readily.

— The *Lancet* believes that much of the coughing to be heard in public assemblies, especially in church, could be avoided by a little care and attention on the part of the coughers. It advises that clergymen may cautiously and courteously call the attention of their congregations to the matter; and suggests that notices posted on the church doors might be received in better part than verbal admonitions from the desk. Meantime it recognizes that faulty heating and ventilation are responsible for some of the necessary coughing which would be left even if the numerous careless and imitative coughs could be suppressed.

NEW ENGLAND.

— City Treasurer Turner, who acted as treasurer of the fund raised in Boston for the relief of the yellow-fever sufferers at Jacksonville, Florida, has closed the account. The amount contributed was $16,302.97.

— The twenty-fifth annual meeting of the corporation of Rhode Island Hospital was held at the hospital, Nov. 14, with the president, Governor Taft, in the chair. Mr. Arnold Green read the report of the board of trustees, showing the condition of affairs at the hospital during the past year. The average number of patients each day during the year had been 34 13-100; the largest number at any time was 106, and smallest number 67.

The receipts for the year were $42,187.60, and the expenditures $50,263.29.

— At the seventeenth annual meeting of the New Haven Dispensary, held November 13, Dr. Fleischner, secretary, presented his report, which showed that the work had been conducted as in preceding years, and that the donations had been liberal, but inadequate to meet the requirements of the institution, and confined to a limited number of people. He stated that the usual deficit on account of rent due Yale University would be eliminated from future reports, the university having offered the dispensary quarters in the medical school free of charge. It is thought that the institution will now be solvent.

NEW YORK.

— The twelfth annual meeting of the American Academy of Medicine was held in the governor's room of the New York hospital, November 13th and 14th, with the President, Dr. Frederick H. Gerrish, in the chair. Among those present from a distance were Drs. Wm. B. Canfield, of Baltimore; R. J. Levis, J. Preston Morris, W. B. Atkinson, Theophilus Parvin, Richard J. Dunglison, and James G. Wilson, of Philadephia; Henry O. Marcy and

Samuel Nelson, of Boston; W. S. Todd, of Bridgeport, Connecticut; E. N. Stoddard, of Rochester; George J. Fisher, of Sing Sing; Trail Green, of Easton, Pennsylvania; Leartus Connor, of Detroit; E. H. M. Sell, of Allentown, Pennsylvania; C. E. Webster, of Portland, Maine; and R. L. Sibbet, of Carlisle, Pennsylvania.

The annual dinner was held at Martinelli's on the evening of the 13th. During the meeting about one hundred new fellows were elected.

— The forty-first anniversary of the New York Academy of Medicine was celebrated November 15th, when Dr. D. B. St. John Roosa delivered the address, taking for his subject, "The means of perfecting the unity of the medical profession."

— The annual meeting of the Society for the Relief of the Ruptured and Crippled was held November 14th, at the hospital building at the corner of Forty-second street and Lexington avenue. During the past year three thousand three hundred and eighty cases of rupture were treated, making forty-two and one-fourth per cent. of the whole number of patients. Dr. Virgil P. Gibney was appointed surgeon-in-chief, and Dr. W. T. Bull surgeon in the hernia department.

Miscellany.

THE ARMY MEDICAL CORPS.

SURGEON-GENERAL MOORE has reported to the Secretary of War that the Army Medical Board, convened at New York, which adjourned on October 31st, examined twenty-seven candidates for admission to the Medical Corps and fourteen assistant surgeons for promotion. Of the former, six were rejected as physically disqualified, seven as professionally disqualified, while twelve withdrew and only two were approved. Of the assistant surgeons, ten were found qualified and four disqualified. The working methods of this board, says the Surgeon-General, differed radically from those of any of its predecessors. The candidates for admission to the corps were grouped for examination in classes of fifteen and twenty-two, the members being examined simultaneously during a week. Since the adjournment of the board a vacancy in the Medical Corps has occurred by the death of Assistant-Surgeon Weisel; another will take place on November 14th, by the retirement of Surgeon Baily, and a third in April, by the retirement of Surgeon Magruder. It is accordingly recommended that the board be reconvened in May, 1889.

THE BACILLUS OF DIPHTHERIA.

D'ESPINE of Geneva has made a series of researches confirmatory of Löffler's claim that a certain bacillus discovered by him in diphtheritic false membranes is the causal agent of diphtheria. The results are published in the *Lyon Médical*. D'Espine has never failed to find Löffler's bacillus in cases of true diphtheria or diphtheritic croup; and he has in many instances succeeded in reproducing the disease in hares and guinea pigs by inoculating the products of a series of pure cultures; bacilli from a twenty-fifth culture were proved to have the same pathogenic properties, and speedily induced the disease.

GIRDING UP THE LOINS.

THE drift of public discussion in England, not only among scientists, but also among athletes and others interested in physical training, seems, according to an editorial in *Science*, to be against the acceptance of Professor Roy's defence of stays and corsets at the recent meeting of the British Association. Some of the leading journals of London were instant in their approval of Professor Roy's theories; but where they have done so, immediate protests have come from their readers. *The Spectator*, for instance, in a recent number, after quoting Professor Roy's assertion that the desire for waist-belts is instructive, and has been displayed by all athletes, and persons of whom exertion is required, since the beginning of history, adds, "It will be observed that this argument, which is certainly true of all runners, Asiatic or European, applies to men equally with women, though men gird themselves only to meet special calls upon their strength." To this a recent graduate from Cambridge, where he was distinguished as a runner and long-distance bicycle-rider, protests that neither runners nor experts upon the wheel, at that university, ever used, or showed a desire to use, tight waist-belts. On the contrary, it was their custom to gird themselves as loosely as possible in order to allow free movement of the diaphragm. If rowers even wear waist-belts, they are so loose as to cause no interference with the freest movements of all the muscles of the body. It is probable that the habit of "girding up the loins" preparatory to physical exertion originated in Oriental countries, where in ancient times, and now as well, the peculiar form of the prevailing costume made it necessary in order to secure free movement of the limbs. A custom once established needs no further explanation. It may survive long after there is any reason for it. The Hittites wore peaked-toed, turned-up shoes thousands of years after their ancestors had come from the mountains of the north, where the form of their snow-shoes suggested the peculiar fashion; and the daily life of every people is full of instances that might be cited. Nobody to-day places restraint upon any of his organs if he desires to excel in feats of strength or speed. He may wear a waist-belt, but it is never so tight, as has already been remarked as to rowers, as to interfere with the free play of the muscles.

Correspondence.

THE BUSTLE.

MR. EDITOR, — The political organization that demanded on its transparency "More bustle in the White House," shows how firmly man is wedded to his idols, though the "great bargains" advertised by the far-sighted dealers indicate that the bustle is already passing away.

Yours truly,

JUVENTUS.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 10, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526.081	627	226	17.76	14.08	2.40	1.59	5.28
Philadelphia	1,016,758	334	96	13.05	15.08	1.16	3.77	4.35
Brooklyn	751,432	255	90	19.11	11.31	1.56	1.56	10.92
Chicago	760.000	—	—	—	—	—	—	—
St. Louis	449.160	—	—	—	—	—	—	—
Baltimore	437.155	118	43	17.00	8 47	85	3.40	7.65
Boston	407.024	180	56	11.11	16.66	65	1.11	7.22
Cincinnati	325.000	77	—	14.19	11.61	—	9.03	3.87
New Orleans	248,000	115	44	17.00	11.15	9.35	—	2.55
Buffalo	230.000	—	—	—	—	—	—	—
Washington	225,000	69	23	21.75	15.95	2.90	10.15	5.80
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200 000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80.000	—	—	—	—	—	—	—
Nashville	65,153	31	17	19.38	3 23	—	3.23	6.46
Charleston	60.145	28	13	21.42	7.14	14.28	7.14	—
Portland	40.000	12	1	8 33	8 33	8.33	—	—
Worcester	76.328	22	10	22.75	9.10	4.55	9.10	4.55
Lowell	69.530	—	—	—	—	—	—	—
Cambridge	64.079	17	7	17.64	23.52	5.88	—	11.76
Fall River	61.203	26	9	19.25	15 40	—	3.85	2.55
Lynn	51,467	15	—	20 00	26.66	6.66	—	13.33
Lawrence	40,175	8	3	12.50	12.50	—	12.50	—
Springfield	39.952	15	4	39 96	6 66	13.33	—	26.66
New Bedford	36.298	11	0	—	18.18	—	—	—
Somerville	33.307	4	3	50 00	25.00	—	—	25.00
Holyoke	32 887	—	—	—	—	—	—	—
Salem	28.781	8	2	—	25.00	—	—	—
Chelsea	27.552	8	2	12.50	25 00	—	—	12.50
Haverhill	24.979	6	4	16.66	—	16.66	—	—
Taunton	24.796	8	0	25 00	25.00	—	12.50	12.50
Brockton	24,784	7	3	—	28.56	—	—	—
Gloucester	23.187	—	—	—	—	—	—	—
Newton	21,105	2	0	—	—	—	—	—
Malden	18.932	9	1	—	22.22	—	—	—
Fitchburg	17.534	4	0	—	25.00	—	—	—
Waltham	16.651	4	0	25.00	25.00	—	—	25.00
Newburyport	13.839	3	0	—	33.33	—	—	—
Northampton	13.419	—	—	—	—	—	—	—

Deaths reported 2024: under five years of age 657; principal infectious diseases (small-pox, measles, diphtheria and croup; whooping-cough, erysipelas and fevers) 339, consumption 278, lung diseases 273, diphtheria and croups 25, typhoid fever 56, diarrhœal diseases 52, scarlet fever 47, malarial fever 23, whooping cough 23, measles 16, cerebro-spinal meningitis 4. Small-pox, New York 1. From scarlet fever, New York 26, Philadelphia 12, Brooklyn 5, Fall River 3, Baltimore 1. From malaria fever, New Orleans 9, New York 7, Brooklyn 4, Nashville 2, Baltimore 1. From whooping-cough, New York 16, Baltimore 4, Brooklyn 3, Washington 2, Boston 1. From measles, New York 8, Fall River 3, Brooklyn and Cincinnati 1 each. From cerebro-spinal meningitis, New York, Boston, Worcester, and Fall River 1 each.

In the 28 greater towns of England and Wales with an estimated population of 9,398,273 for the week ending October 27th, the death-rate was 21.8. Deaths reported 3930: under one year of age, 1022: measles 169, diarrhœa 93, fever 63, scarlet fever 53, diphtheria 47, whooping-cough 45, small-pox (London and Preston) one each —two.

The death-rates ranged from 15.7 in Derby to 32.8 in Manchester; Birmingham 19.3; Bradford 20.7; Hull 22.4; Leeds 24.4; Leicester 16.0; Liverpool 22.8; London 21.2, Nottingham 21.0; Portsmouth 22.1; Sheffield 20.3; Sunderland 22.2.

In Edinburgh 16.1; Glasgow 20.2; Dublin 27.9.

OBITUARY. HENRY B. SANDS, M. D.

Dr. Henry B. Sands, widely known as a surgeon and lecturer on anatomy, died suddenly Sunday afternoon, November 18, in his own carriage on Fifth Avenue, probably of apoplexy. He had recently been in the best of spirits and apparent good health. He attended church in the morning, and then ate a hearty meal before starting out to make a professional visit. Returning he was conversing animatedly with a friend, Dr. A. A. Smith, when he suddenly turned to raise the carriage window. This seemed to his companion to be a little singular, as the doctor had remarked a few moments before that the afternoon was rather cold. Dr. Smith immediately noticed that Dr Sands' head was bent forward, and that he acted as though he was stifled. Dr. Sands then fell on the shoulder of his associate and in a few minutes was dead. The sadness of the death was accentuated by the fact that a number of gentlemen were assembled at Dr. Sands' house for a musical afternoon, and to his waiting friends only his dead body was brought home. Dr. Sands was born September 27, 1830, in New York, and had made that city and Brooklyn his only home. On entering the College of Physicians and Surgeons in this city he became known as a faithful and energetic student. He graduated from the college in 1854 and after a service as interne in Bellevue Hospital and a year or more of study abroad, on his return, in 1857, he was made Demonstrator of Anatomy in the College of Physicians and Surgeons. From that date he became well known all through the city. He has lectured on anatomy and surgery in the Medical College of Physicians and Surgeons to the present time. He has also during the past twenty-five years been connected with every hospital in the city. His last position was visiting surgeon at Roosevelt Hospital, from which he resigned only last spring. He was married in 1859 to Miss Curtiss of Brooklyn. Two of his children by this marriage—Dr. Robert A. Sands and Miss Josephine Sands—survive him. His second marriage, in 1875, was to a daughter of Peter Hayden. One son by this marriage is living.

Dr. Sands was a Director of the Vanderbilt Clinic, a member of the New York Academy of Medicine, the County Medical Society, the Pathological Society, the Physicians' Mutual Aid Association, the Society for the Relief of Widows and Orphans of Medical Men, and of the Medical and Surgical Society. He was also connected with the New York Philharmonic Society.

Dr. Sands has often been before the public from his connection with the cases of celebrated men, having been called as a consultant in the cases of President Garfield, General Grant, Roscoe Conkling, and other public men. His private and hospital surgical practice was large and varied, and he had achieved exceptional success in laparotomy. In him, certainly, America has lost one of her foremost surgeons.

The meteorological record for the week ending November 10, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Nov. 10, 1888.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.	Daily Mean.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	Duration. Hours & Min.	Amount in Inches.
Nov. 4	30.22	48.0	56.0	40.0	63	47	55.0	W.	W.	12	4	C.	C.		.0
" 5	30.27	54.0	61.0	45.0	63	71	67.0	S. W	S. W.	18	13	F.	O.		
" 6	29.96	63.0	70.0	56.0	89	80	84.0	S. W	S. W.	S	21	O.	O.	0.05	T.
" 7	30.16	52.0	60.0	44.0	69	51	60.0	W.	N. W.	17	13	F.	C.		
" 8	30.44	45.0	47.0	39.0	63	79	71.0	E.	E.	11	13	O.	R.	2.10	.01
" 9	29.94	57.0	66.0	45.0	93	85	89.0	W.	S. W.	7	12	O.	O.	7.00	.17
" 10	29.66	46.0	56.0	43.0	100	96	98.0	N. E.	N. E.	18	2	R.	R.	24.00	1.14
Means for the Week															

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM NOVEMBER 10, 1888, to NOVEMBER 16, 1888.

By direction of the Secretary of War, the retirement from active service, this date, by operation of law, of Colonel ELISHA J. BAILY, surgeon, under the provisions of the Act of Congress, approved June 30th, 1882, is announced. Colonel Baily will repair to his home. Paragraph 1, S. O. 266, A. G. O., Washington, November 14, 1888.

By direction of the President, Lieutenant-Colonel BASIL NORRIS and Major HENRY R. TILTON, surgeons U. S. Army, are detailed as members of the Army Retiring Board appointed to meet at San Francisco, Cal., by War Department order, dated October 27, 1888. Published in Special Orders, No. 253, October 30, 1888.

From Headquarters of the Army, vice Colonel Elisha J. Baily, surgeon, and Captain John J. Cochran, assistant surgeon, hereby relieved. Paragraph 13, S. O., 261, A. G. O., Washington, November 8, 1888.

MCCLELLAN, ELY, Major, surgeon, is relieved from duty at Jefferson Barracks, Mo., and will report for duty at Chicago, Ills., as attending surgeon and examiner of recruits. Paragraph 15, S. O., 261, A. G. O., Washington, November 8, 1888.

BARTHOLF, JOHN H., Major, surgeon, is relieved from further duty in the Department of Texas, and will report to the commanding officer at Plattsburgh Barracks, N. Y. Paragraph 15, S. O. 261, A. G. O., Washington, November 8, 1888.

ARTHUR, W. H., assistant surgeon, upon being relieved by acting assistant Surgeon J. L. Ord, will proceed to comply with paragraph 21, S. O. No. 250, c. s. Headquarters of the Army. Paragraph 5, S. O. 123, Hdqrs. Department of Arizona, Los Angeles, Cal., November 5, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING NOVEMBER 17, 1888.

SWAN ROBERT, passed assistant surgeon, ordered before Retiring Board, 19th inst.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A Regular Meeting of the Society will be held at the Medical Library on Monday, November 26, at 7.45 P. M. Reader, Dr. H. L. Morse: Subject, "Treatment in cases whose symptoms point to Inflammation in the Mastoid Antrum and Mastoid Cells, but which do not call for an Artificial Opening into the Mastoid Process."

F. B. HARRINGTON, M. D., *Secretary.*

NORFOLK DISTRICT MEDICAL SOCIETY. — A Meeting for Scientific Improvement will be held at the hall of the Roxbury City Guard, 67 Warren St., Roxbury, November 27, 1888, at 7.45 P. M. Communications: "A Case of difficult Diagnosis,—Typhoid Fever or Consequences of a reduced Inguinal Hernia," by F. B. Stephenson, M. D.; "The Treatment of Chronic Ulcer of the Leg," by J. Gillespie, M. D.

S. ALLEN POTTER, M. D., *Secretary.*

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION will hold its annual meeting at Birmingham, Ala., December 4th, 5th and 6th, 1888. An exceedingly full programme is offered, as well as interesting excursions and entertainments.

ASSOCIATION OF ACTING ASSISTANT SURGEONS OF THE U. S. ARMY. — 1888.

THOSE amiliar with the Army Medical History of the frontier for the past twenty or thirty years will readily bear witness to the faithful and intelligent discharge of their duties by the Acting Assistant Surgeons of the U. S. A. In fort and in camp, on the long overland expedition, or in the Indian wars, these men have done their duty as faithfully and with the same professional efficacy as if they had been regularly commissioned officers. Indeed, if they have not borne the burden and heat of the day, certainly their honorable records deserve recognition and preservation.

An association of past and present Acting Assistant Surgeons of the United States Army has been formed for the purpose of securing, so far as possible, a correct history of those who have served in this capacity, and also for mutual protection and benefit.

The Association desires to obtain a complete list of all medical men who have served as Acting Assistant Surgeons in the United States Army, and, so far as possible, their complete medical history, date and place of birth, date and place of graduation, date of appointment, medical service and stations, list of contributions to medical literature, inventions, etc., date of termination of service, professional positions held in civil life, present residence and address.

All information from friends concerning deceased Acting Assistant Surgeons will be gratefully received.

All past and present Acting Assistant Surgeons are cordially invited to become members of the Association.

The badge of the Association is the Geneva Red Cross.

The enrolment fee is $1.00.

The necessary blanks will be forwarded upon application.

W. THORNTON PARKER, M. D.,
Recorder A. A. A. S.,
Newport, R. I.

BOOKS AND PAMPHLETS RECEIVED.

The Preferable Climate for Phthisis; or, the Comparative importance of different Climatic attributes in the arrest of Chronic Pulmonary Diseases. By Charles Denison, A.M., M.D.

Medical Diagnosis. A manual of Clinical Methods. By J. Graham Brown. M. D., etc., etc. Second Edition illustrated. New York: E. B. Treat. 1888.

Miss Parlon's New Cook Book. By Maria Parlon, Principal of the School of Cooking in Boston, etc. Limited Edition. Boston: Published by Estes and Lauriat.

Clinical Lectures on certain diseases of the Nervous System. By Prof. J. M. Charcot, etc., etc. Translated by E. P. Hurd, M.D. Detroit: George S. Davis. 1888.

The Life Insurance Examiner. A practical treatise upon Medical Examinations for Life Insurance. By Charles F. Stillmann, M.S. M.D., etc., etc New York and Chicago Spectator Co. 1888.

Treatise on the Diseases of Woman. For the use of Students and Practitioners. By Alexander J. C. Skene, M.D. With 251 engravings and 9 chromo-lithographs. New York: D. Appleton & Co. 1888.

Cataract Extractions, with only the Eye operated upon closed by Adhesive Strips. The other Eye left open for the Guidance of the Patient. By Chisolm, M.D., Professor of Eye and Ear Surgery in the University of Maryland, and Surgeon-in-Chief of the Presbyterian Eye and Ear Charity Hospital of Baltimore City. Read in the Section on Ophthalmology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888. Reprinted from the "Journal of the American Medical Association," November 3, 1888. Chicago. 1888.

The Great Value of a 0.25 D. Cylinder in the Relief of Headache and Eye Pains. By Julian J. Chisolm, M. D., Professor of Eye and Ear Diseases in the University of Maryland, and Surgeon-in Chief of the Presbyterian Eye and Ear Charity Hospital of Baltimore. Read in the Section on Ophthalmology and Otology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888. Reprinted from the "Journal of the American Medical Association," October 27, 1888. Chicago. 1888.

Our Present Knowledge regarding Muscular Atrophies and Hypertrophies. By Landon Carter Gray, M.D. Reprint.

Three Successful Cases of Cerebral Surgery. Including (1) the removal of a large intracranial fibroma; (2) exsection of damaged brain tissue; and (3) exsection of the cerebral centre for the left hand; with remarks on the general technique of such operations. By W. W. Keen, M.D., Professor of Surgery in the Woman's Medical College of Pennsylvania; Surgeon to St. Mary's, St. Agnes's, and the Woman's Hospitals, etc. From the American Journal of the Medical Sciences, October and November, 1888.

Original Articles.

EXCISION OF THE BREAST FOR CANCER.[1]

R. M. HODGES, M. D.

The technical simplicity of excision of the female breast leads — or has led — to its being performed with but little hesitation even by those not accustomed to surgical operations of similar importance. Tumors of the breast are frequent, and excite so much anxiety in the minds of women, that a degree of familiarity with their character is acquired by every practitioner. The traditional importance ascribed to excision, over-persuasion of her advisor by the patient, or of the patient by her officious *entourage*, and commiseration for distress, encourage on all sides a disposition to "do something." The question of interference being decided affirmatively, family physicians often become surgeons for the occasion. The financial value of this operation is such, that were it stricken from the list of permissible surgical procedures, the fact would be perceptibly recognized by many a professional income. In other words, excision of the breast is one of the most common of the major operations of surgery; the inducements to perform it are numerous; and the judgment with which it is undertaken not always so discriminating as might be desirable.

Within the last decade, however, a new departure in the operative surgery of cancer of the breast — suggested more than twenty years ago by the late Mr. Charles H. Moore, of Middlesex Hospital, London, in a paper entitled, "The Influence of Inadequate Operations in Cancer" (*Med. Chir. Trans.*, vol. l. p. 225) — has offered itself for consideration. Its requisitions eliminate excision of the breast for cancer from the category of commonplace operations, and are certainly calculated to diminish the frequency of its performance.

According to Mr. Banks, of Liverpool (*British Med. Journal*, December 9, 1882), one of its oldest and most earnest advocates, the attitude of this innovation in regard to the removal of a cancerous mamma is, that the integuments are to be sacrificed without heed to the question of covering the wound; [*i. e.*, extent of disease should not be an obstacle in operating;] that the fascia is always to be dissected from the pectoral muscle, with as much fibre of the latter as may be deemed advisable; and, whether involved or not, that the axilla is to be cleared, not merely of glands, but of all its tissues, — nerves and vessels excepted,— with a completeness only equalled in a dissection for anatomical demonstration. Furthermore, if recurrence of the disease takes place, operation after operation should be performed, with the most callous and exacting effort at thorough extirpation.

The partisans of this "completed method," as it is called, inculcate the necessity of its adoption in the earliest stages of a growth's development, on account of the alleged "local origin" of cancer.

The claim of this radical measure is, a prolongation of life, not otherwise attainable, and an actual "cure" of cancer in a percentage of cases far from inconsiderable, sufficiently great to justify its admitted danger and mortality. One of its upholders says, "There are so many examples of final cure after repeated operations, that faith in the knife should not be too easily shaken. It is sometimes a question which should wear out the sooner, the blade or the disease. There are instances of cure after five, six, seven operations. If need be, we should say, seventy times seven, rather than grow weary in well doing"[2] (*New York Med. Record*, January 22, 1887).

In the following paper I propose to consider the treatment of mammary cancer by excision, especially the method of excision just described; and in so doing I shall help myself, without scruple, to the writings and observations of others.

Before entering upon the details of this subject I venture to make the remark that our knowledge of cancer is very defective, in fact, almost hypothetical. The question, "What is cancer?" includes the more important one, "What is the cause of its malignancy, or of that potentiality, the essence of which is the production of secondary formations?" Neither of these natural inquiries has yet received an answer. The laws governing the conditions or the time required for a metastatic development of cancer are absolutely unknown, and whether or no the theory of its "local origin" is a justifiable one has not been definitively settled. A blow on the breast may be followed by — perhaps even occasion — a cancer of that part. Such an event, extremely rare in comparison with the frequency of blows in the region, implies a pre-existing state, sensitive in an exceptional way to the influences of an injury, and lying in wait, as it were, for some local disturbance to set its peculiar forces in motion. But it does not follow that the tumor which happens to develop in that particular spot is therefore a distinctly local affair.

The statements of Dr. M. H. Richardson are of importance in this connection. In his elaborate analytical "Observations on the Surgical Treatment of Malignant Growths" (*Boston Med. and Surg. Journal*, August 30 and September 6, 1888) he says, "I have never made this dissection (*i. e.*, of the axilla in connection with excision of the breast) in any case where I have not found some of the glands affected, even when nothing could be felt on the outside. The investigations of Dr. Whitney have also shown that this mass of fat (*i. e.*, the axillary) contains or may contain clusters of cancer cells, wholly independent of the glands, and when the glands themselves are not visibly affected.

[1] Read before the Boston Society for Medical Improvement, November 12, 1888.

[2] "Surgeons are beginning to know that cancer can be cured by thorough operations, if it be attacked before it has disseminated itself extensively locally, or has tainted the general system. In favor of this modern doctrine the life history of the affection shows, first, that it is primarily a local degeneration of the mamma, and that its tendency is to advance toward the surface before it invades the deeper structures, the lymphatic glands, and the viscera; and, secondly, that local infection does not ensue, on an average, before the expiration of thirteen months, the skin being involved in fourteen months, the lymphatic glands in fifteen months, the walls of the chest in twenty-two months, and the viscera in twenty-one months. Hence if the local trouble can be gotten rid of before it has contaminated the adjacent and distant structures, there is no reason why the remedy should not prove to be as final as it is for the non-carcinomatous neoplasms" ("A Practical Treatise on Tumors of the Mammary Gland." S. W. Gross, New York, 1860, p. 225.)

At the seventeenth congress of the German Surgical Society, held in Berlin, April 4, 5, 6, 7, 1888, Herr Bergmann, president of the congress, exhibited a patient upon whom he had performed resection of the jejunum four times for carcinoma. The mesenteric glands had also been removed. The patient was perfectly well, and had gained forty pounds of flesh since the last operation. The most careful examination of the abdomen failed to reveal the slightest swelling in any portion. Herr Bergmann "felt justified, from the result in this case, in making the assertion that cancer is curable" (New York Med. Record, May 12, 1888, p. 534).

Other observers have found the lymphatics affected with malignant disease when not perceptibly enlarged." This being true of the axillary, it is also presumably true of the contiguous cervical, internal mammary, and mediastinal glands, or possibly of more remote lymphatic connections; but these facts certainly do not indicate, — they rather disprove, in a surgical sense, at all events, — a local initiative of cancerous developments, even when the paternity of any given case is seemingly recognizable. The testimony of dissections, as well as the principle of thoroughness upon which the doctrine of completed operations is based, would seem therefore to be at variance with, if not a surrender of, the theory of local origin. The more extensive the operation performed, the greater must be the assumed dispersion of the disease. Excision of the axilla in every instance of cancer of the breast would lose its meaning unless the locality were believed to be always pervaded by the disease, in its elementary forms at least, though it may be invisible to the naked eye.

The assertion that the "cure of the disease by the removal of the local growth is an unanswerable argument in favor of local origin" would certainly be true if "cures" occur often enough to make the averment a convincingly correct one, — often enough, for example, to satisfy observers that diagnosis has not been at fault, or that too much has not been arrogated when patients are claimed to have been "cured." "It is believed by some," says Mr. Paget, "that cancer of the breast is in the first instance a local disease. If this opinion were true we ought to find the average interval between removal of the disease and its recurrence bearing an inverse proportion to the time of duration of the cancer before removal. No such proportion, however, exists; nor does it even appear that recurrence is, on the whole, later after early than after delayed operations" ("Lectures on Surgical Pathology," by James Paget, 3rd ed., London, 1870, p. 653).

Beyond the fact that cancer is not a "blood-disease," — an abandonment of the idea that there is any special cachexia belonging to the cancerous, — and an acceptance of the general correctness of the theory of its epithelial origin, — we know but little about the affection (*vide Lancet*, July 7, 1888, p. 29). At all events, whether we hold cancer to be at first "local," or at first "constitutional," the result of surgical operations with a view to its cure must be the same in either case, unless we acquire, in some way, an ability to detect the disease before it has time to develop its tangible or obvious manifestations (Paget, *loc. cit.*, p. 655).

Up to the present, or rather, a recent time, of all chronic affections, cancer has been regarded as the most surely and absolutely incurable, progressing inexorably to a fatal result. "There is a striking contrast between the certain issue and the uncertain progress of cancers of the breast. Cases are on record in which life has been ended in four months, and others in which it has been prolonged twenty-five years; but I am not aware," says Mr. Paget, whose words I am quoting, "of a single clear instance of recovery; of such recovery, that is, as that the patient should live for more than ten years free from the disease, or with the disease stationary" (*loc. cit.*, p. 649).

As "cancer curing" has always been considered an opprobrious expression, it may properly be asked what do educated surgeons meanat the present time by a cure of cancer of the breast?

Dr. S. W. Gross ("A Practical Treatise on Tumors of the Mammary Gland," New York, 1880, p. 223), whose definition appears to find a certain degree of acceptance, says, as already stated, that the curability of cancer is confirmed by the practical test of the results of operations. Having shown by the numerical method that, in an average of cases, metastatic tumors develop in thirty-one months, and that death, preceded or not by operation, takes place in thirty-three months, he then alleges, if three years (thirty-six months) elapse after the last removal, one or more operations having been performed, that "local reproduction" takes place in less than one per cent. of all cases operated on. Therefore, if the patient survives three years after the last operation without appreciable recurrence of the cancer, or dies of some intercurrent malady under the same circumstances, she has recovered. Applying the "severe test of recovery," viz., that the patient should live "more than ten years free from the disease," Dr. Gross claims (*loc. cit.*, p. 142) that his tables "will show that rather more than one in six fulfils this condition."

Statistics of results, which are supposed to represent the experience of surgeons whose practice has been influenced by Mr. Moore's article on "Inadequate Operations in Cancer," indicate, for example, that, in ninety-seven cases of cancer of the breast, pursuing its natural course, not including thirteen still alive in bad condition, and fourteen whose fate was unknown, the average duration of life was 27.1 months; while in two hundred and twenty-four cases which died after operation with recurrence of the disease, the average duration of life was thirty-nine months. A collation of the two averages would seem to suggest that operation adds twelve months to the life of the patient (Gross, *loc. cit.*, p. 163 *et seq.*).

From a comparison in results between the two dictinct procedures, amputation of the breast alone, and amputation of the breast together with excision of the axilla, it appears "On The Operative Treatment of Malignant Disease," by Henry T. Butlin: Philadelphia, 1887, p. 384 *et seq.*) that, in one hundred and forty-one cases where the breast alone was removed, twelve died of the operation; forty-three were lost sight of after their recovery;[3] twenty-seven were alive and well at various periods after the operation, but only eighteen of them had passed "the three years' limit." If to these eighteen is added the case of a patient who died of another disease long after the operation, there are nineteen cases of what are termed "complete cures" due to operation, to be compared, not with the total number of one hundred and forty-one, but with a total of ninety-eight, procured by deducting the forty-three cases of patients lost sight of after the operation.

The results of one hundred and seventy operations,

[3] Forty-eight were dead or dying, or had been quite recently treated for recurrence *in situ*; three were dead or dying of affection of the glands without local recurrence; three died of other causes than cancer, one of the three more than four years after the operation; three appear to have died of dissemination of the disease, without local recurrence.

which embraced amputation of the breast and removal of glands in the axilla, were: thirty-nine died of the operation; twenty-six were lost sight of soon after recovery;[4] twenty-five were known to be alive and well at various periods after the operation; but the time which had elapsed was under a year in ten of these cases, and over three years also in ten of them. Add to these ten the case of a patient who died of apoplexy more than three years after operation without any sign of cancer, and deduct from the grand total of one hundred and seventy the twenty-six who were lost sight of, there will remain eleven instances of cure in one hundred and forty-four cases.

In view of these thirty cases (nineteen and eleven) cured out of three hundred and eleven operations, reduced to two hundred and forty-two by the patients lost sight of, Mr. Butlin says: "I am confident that we may regard operations for the removal of mammary cancer as successful in effecting a complete cure in rather more than 10 per cent. of all cases treated. I believe," he adds, "that a percentage of 12 to 15 per cent. is nearer the truth."

The total mortality in these three hundred and eleven cases was fifty-one, that of the larger operation being much more than twice as great as that of the lesser. Of three hundred and ninety-four "*adequate*" operations performed at the Bethany Hospital, Berlin, between 1873–76, 18.02 per cent. were fatal, and the mortality was two-thirds less where the axillary glands did not require removal. Thus, of two hundred and sixty-four cases in which the breast was amputated bodily and the axilla was cleaned out, 61, or 23.10 per cent., died; while, of one hundred and thirty cases in which the breast alone was removed, 10, or 7.69 per cent., only were fatal (Gross, *loc. cit.*, p. 227).

There are, on the other hand, a good many tables whose balance sheets are not at all in accordance with the exhibits which have just been given. It is shown, for instance, by the somewhat abused statistics of Leroy d'Etiolles, quoted by Lebert ("Traité Pratique des Maladies Cancéreuses," Paris, 1851, p. 183 *et seq.*), that of 2781 cases of cancer in general, in 1192 not operated on, still living, or who have died cancerous, eighteen survived more than thirty years after the development of the disease; while of eight hundred and one operated on, four only lived that length of time. Thirty-four non-operated cases and fifteen operated lived from twenty to thirty years; two hundred and twenty-eight non-operated and eighty-eight operated lived from six to twenty years. The compiler of these figures says: "It appears, therefore, that the advantage, so far as long duration of life is concerned, is not with those who are operated on;" and Lebert, from his personal tables of cancer of the breast alone, declares "that the duration of life is, on the average, no longer for women who have undergone one or several operations than for those who have not been operated on at all" (*loc. cit.*, p. 359).

Mr. Paget makes the average duration of life, from the patient's first observation of the disease, in sixty-one cases of mammary cancer, tabulated without selection, in which the growth ran its course uninterrupted by operative treatment, to be a little more than forty-nine months; and, in forty-seven cases in which the cancer was once or more removed by operation, the average duration of life was again something more than forty-nine months.[5] He believes, therefore, that removal of the local disease makes no material difference in the average duration of life (*loc. cit.*, p. 649).

The sources from which these latter dissentient figures are derived antedate the period of modern surgical methods, so far as antisepsis, drainage, etc., are concerned. The locality of the operation presents well-recognized difficulties in their application; but with the best efforts, even of experts, the mortality of cases in which antiseptic dressings have been adopted appears by more than one estimate to be numerically higher than when no such expedients have been made use of. The experience in Esmarch's clinic sustains this statement. In one hundred and eighty-four operations there were sixteen deaths, or 8.7 per cent. under ordinary dressings; while in seventy-seven conducted upon the antiseptic principle, 7, or 9.1 per cent. were fatal (Gross, *loc. cit.*, p. 235). If the fact, that antisepticism permits and encourages greater thoroughness and severity in excising cancerous breasts, is used as a plea to extenuate and explain this mortality, we are asked to accept a surgical paradox which would offset the security of asepsis by the more critical operations which it inspires.

The "completed operation" is no longer *sub judice*. Dr. Gross' volume published in 1880, Mr. Banks' first article in 1882, and Mr. Butlin's detailed discussion of the method in 1887, have each dealt with the question on the basis of a large personal experience and of numerous cases. Indeed, it may be said to have been on trial ever since Mr. Moore's paper in 1867. All of these writers admit its great mortality, and there is no unanimity in its acceptance by surgeons at the present day. Even those who adopt the method lend it but a hesitating allegiance. Mr. Butlin, whose firm belief in thorough excision persuades him, as already quoted, that it is successful in effecting a complete cure in from 12–15 per cent. of all cases treated, is also equally ready to declare that he entirely disapproves of the "completed," "thorough," "wholesale," method of operating, — I use his own words, — and considers it an unscientific, unsurgical proceeding, needlessly cruel to many women (*loc. cit.*, p. 375).

In a discussion at the Harveian Society, March 3, 1887 (*Lancet*, March 12, 1887, pp. 538, 627; *British Medical Journal*, March 12, 1887, p. 572), following a second paper by Mr. Banks, on "The Advisability of Extirpating the Axillary Glands in all cases of Amputation of Scirrhous Mammæ" (his first paper having appeared five years before), Mr. Thomas Bryant remarked, while, theoretically, the completed operation was all which could be desired, that, turning from theory to practice, he felt it was worse than the incompleted. According to his own experience the average duration of life after the severe operation was not much greater than that following the milder procedure. Statis-

[4] Sixty-two died of recurrence of the disease, or of general carcinomatous disease; seventeen were alive with recurrence; one died of apoplexy, more than three years after the operation, without any sign of cancer, and may therefore be claimed to have been cured.

[5] Mr. Paget says, "something more," because in the first list he includes five, and in the second six cases, still living more than forty-nine months from the first observation of the disease.

ties showed that with the incompleted operation one-third of the cases lived for six years, and one-quarter for ten years or more. It might fairly be questioned whether the completed gave better results.

Mr. Pick was not prepared to agree with Mr. Banks that clearing out the axillary space was either necessary or judicious.

Mr. T. Smith thought the greater mortality of the completed operation was lawful if the return of the cancer could be shown to be less frequent, but the fact was "the patients lived longest who had never been operated on."[6]

It has been an established practice of surgeons to open the axilla if its glands are tangibly enlarged; but, as has already been shown, it is not possible to tell by the sense of touch to what extent the glands are affected, and they are always found to be more numerously and deeply implicated than supposed. That it may be impracticable to dissect out all which are even visibly involved is confessed by Mr. Banks (*loc. cit.*, p. 1138), who states that "in three cases there were still glands so adherent to the vein that they could not be removed, while the condition of the patient was such that it was clear the sooner she was off the table the better, lest an immediate sinking should occur."

In the forty-six cases of Mr. Banks' earlier paper there are five in which the breast alone was removed. The results in these were very decidedly better than those of the completed operation;[7] while, from an analysis of his own collection of three hundred and eleven cases, one hundred and forty-one in which the breast only was removed, and one hundred and seventy of amputation of the breast and of removal of the glands in the axilla, Mr. Butlin says (*loc. cit.*, p. 384, 385), "setting aside the question of mortality, two points stand clearly out: first, the cases in which the breast alone was amputated afforded by far the largest proportion of cures; second, the proportion of cases in which the disease appeared in the axilla, without recurring in or near the scar, was singularly small, scarcely more than 3 per cent."

A Belgian surgeon, Dr. Bougard ("Etudes sur le Cancer," Bruxelles, 1882), claims to have cured no fewer than sixty-two out of one hundred and sixty-two patients whose cancers of the breast were treated by the application of caustic, a period of three years having been safely passed since the destruction of the disease. Mr. Butlin declares that, prejudiced as he was by such a statement, a close study of the book in which it is made has led him to the opinion that the author's results are truthfully set forth, and that his success has been largely due to a much more rigid selection of cases for treatment than most operating surgeons are in the habit of practising (*loc. cit.*, p. 387).

If "cures" by caustic are to be accepted as reliable facts (which I cannot readily concede), they must also stand as an argument against the completed operation. The numerous observations of Dr. Richardson ("about sixty") and others (*see ante*, p. 517), indicating that there is no period, however early, where invasion of the axilla has not probably taken place, no exception to its being dissected out in cases where the cancer is apparently confined to the mammary gland can be made by those who promote this severe measure. Its uniform adoption means, therefore, in practice, a formidable immediate mortality; and, in accepting the responsibilities of so fatal a course of proceeding in every case of excision, it should not be forgotten that cancer, not unfrequently, is diagnosticated from other tumors of the breast with something more than difficulty, unless it has already perceptibly involved the axillary glands.

The liberal quotations of figures and their analysis with which I have indulged myself, tempt me to ask if statistics, however useful in the study of other maladies, are really of value in the scrutiny of a disease like cancer. Those which have been collected as to the comparative duration of life, with and without operation, are simple, and doubtless in a measure reliable. Testimony in regard to recurrence, the rate of progress, the complications of the disease, the sufferings, or the relative condition of women whose breasts have been excised, and those who have been left to take their chances without the intervention of surgery, is necessarily indefinite; while that derived from the inmates of charitable institutions during the short period required by the exigencies of an operation, or from inquiries addressed to them or to their representatives, long after the operations were performed, or representing the opinions of physicians who have not followed the cases from the outset, can hardly claim the precision which is essential to practical conclusions. Data thus gathered are usually admitted to include with cancer a certain number of sarcomata, adenomata, epitheliomata, and of tumors imperfectly diagnosticated. Mr. Paget's admirable and elaborate discussion of cancer will impress any one, as that gentleman confesses himself to be, with the difficulty of drawing inferences or indications from an arithmetical dissection of the disease. A multiplicity of cases only complicates their appraisement, and in nothing more than by bringing to one dead level the important influences of the age at which the malady has developed itself, the varying kinds, or, rather, phases of cancer, and the widely different amounts of cachexia which follow its progressive evolution.

Cases of cancer of the breast present the greatest range of clinical dissemblance. In practice they must be taken as they come — circumscribed, nodular, *en cuirasse*, infiltrating, diffused, sloughing, atrophic, in the young and in the old, in the lean and in the fat. The ideal conditions of early diagnosis, and the opportunity of prompt removal, for which so much is claimed, cannot be commanded. Treat-

[6] The cases on which Mr. Banks' first paper (British Med. Journal, Dec. 9, 1882, p. 1140) was based, and of which his second, with thirty-five cases added, was but an amplification, resulted as follows. Of forty-six cases, in five the breast alone was removed, and in forty-one the breast and the axilla were both excised. One was operated on for relief only. Six were fatal from the operation,—mainly from septicæmia. In eleven the disease reappeared, and ten of these had proved fatal at the time of the report. Three died within two years from other causes than cancer. Two were free from return after a period of two to ten years. Five were free from return at the end of two years. One was lost sight of.

[7] One of these cases was quite well three years and four months after the operation. One died at the end of two years of some unknown disease, but without recurrence. One died of paralysis at the end of eighteen months, also without recurrence. One, suffering from a rapidly growing sarcoma, died, shortly, of recurrence *in situ*. One died of affection of the axillary glands, apparently without recurrence in the breast. Judging from his last paper read at the Harveian Society, Mr. Banks would now feel compelled to excise the axilla in every one of these five patients; or, in other words, to subject them to a much more dangerous operation than their disease really required, for the questionable benefit which might follow.

ment by operation, under all circumstances, being an unce-ain recourse, — for we cannot assure ourselves or our patients that the tumor or the glands we extirpate are the only parts which have undergone a morbid change,—answers to the questions of expediency and propriety of its adoption, in any single instance, must hinge, not upon the conceptions drawn from statistics, but upon a judgment enlightened above all by the extent of an acquaintance with cancerous breasts from the beginning to the end of their existence. There should be no difficulty in estimating the success of an operation which has been adopted for so long a period and so generally; and there would not be if surgeons could appeal to an accumulation of individual experience recording a personal knowledge of cancer. The computed duration of life in those operated on in hospitals and in private practice presents a remarkable contrast, being, on an average, fifty-seven months in the former and forty-three months in the latter (*Med. Chir. Trans.*, vol. 45, 1862, p. 406). The lives, shorter by fourteen months, of those operated on in private can only be explained by the supposition that a greater accuracy of data for averging applies to the cases of patients watched in their own homes, and gives them a worse record than the computations made up from the less trustworthy facts obtainable in regard to those who have died after leaving a hospital.

Accepting as admitted, that patients not operated on, sometimes live twenty-five years with cancer of the breast, and in considerable numbers for more than three years; that cases of long duration raise the statistical average of life for those of short; that atrophic and colloid cancer (with their slow progress of four and of twelve years, respectively, as against the average two to three years), together with cases of mild malignancy or of temporary healing, may have been grouped in one common numerical estimate, and, on the strength of it, that patients are liable to be subjected to what Mr. Butlin calls the "surgical blunder" of a large and dangerous operation, as if all were suffering from an equally malignant disease; that the condition of patients, as tabulated at the end of three years, is not usually set forth, except so far as their cicatrices and axillæ are concerned, — it does not seem unreasonable to conclude that "cures" by the knife, — equally supposed to have been accomplished by compression, electrolysis, escharotics, Chian turpentine, belladonna, and cicuta,— must chiefly belong to the class of "exceptional" cases in which it is not gainsaid that excision may justly be practised or even a permanent result anticipated.[8]

Nothing distinctly controverts Mr. Paget's declaration in 1870, when he said that, "in deciding for or against the removal of a cancerous breast in any single case, we may dismiss all hope that the operation will be a final remedy for the disease. I will not say such a thing is impossible, but it is so highly improbable that a hope of its occurring in any single case cannot be reasonably entertained" (*loc. cit.*, p. 655). If it is within the observation of other men that cancers are cured, such a statement as the above is a remarkable one to emanate from the cautious and judicial pen of the surgeon of St. Bartholomew's. The existing methods of operating have not changed the nature of cancer. Neither antiseptic nor searching surgery has modified the facts of malignancy. If they had, cures might be multiplied, perhaps,— they would occur more frequently,— but they must have happened previously; and the questions become pertinent, why were they never met with in the large field of observation of the distinguished practical surgeon I have quoted? and why are they not familiar to medical men generally? That the disease is undiscernible is not evidence of cure. It may exist unrecognized within the thorax, beneath the sternum, in the liver, in the mesenteric glands, all of which are common hiding-places of secret metastatic deposits, and the patient die as truly of her cancer as does the fat woman from whom a voluminous breast has been excised, and in whose redundant subcutaneous adipose tissue the disease swiftly returns in the very line of the cicatrix.

Little weight is attached to "authorities" in these days, but it is not without interest to know, as a matter of history, that Hippocrates (Aphorism xxxviii. sec. vi.), Celsus ("De Re Medica," lib. v. cap. xxvii.), and other ancient writers, denied the utility of operations for cancer. In the time of Alexander Monro many Scotch surgeons were for a long time discouraged by his example from having recourse to excision of the breast ("Edinburgh Medical Essays," 3rd ed., vol. v. p. 346).

The learned and accomplished pathologist, Lebert, says: "I do not hesitate to assert, contrary to the opinion of a majority of surgeons, that" (as between operation and medical palliative treatment without operation) "the latter method of treating cancer of the breast ought to be the rule and by operation the exception." He adds that Dieffenbach, who previously was the surgeon most addicted to excision in Germany, had just written him a letter, saying, "the greater his experience became, the more he was disposed to renounce every operation for cancer of the breast." In another place he still further declares that "surgeons, who for many years have operated on cancerous tumors, struck by their frequent recurrence, have at various periods completely abandoned the operation" (*loc. cit.*, pp. 359, 183). It is probable that he here refers to Boyer ("Traité des Maladies Chirurgicales," t. vii. pp. 240, 241) and to Delpech ("Sur les Maladies Chirurgicales," t. iii. p. 161), both of whom taught that an operation ought never to be undertaken when the disease had been ascertained to be genuine cancer.

Mr. John Macfarlane, of Glasgow, in an admirable paper published a good many years ago, but as learned as if written at the present day, entitled, "Remarks on Carcinoma of the Mamma, and on the Inefficiency of Surgical Operations in that Disease" (*London Medical Gazette*, 1838, N. S., vol. ii. p. 417), says: "Of thirty-two cases operated on by myself, in which the carcinomatous nature of the disease was distinctly ascertained, the cure was not permanent in a single instance.[9] In eighty-

[8] "To deal with single cases," says Mr. Paget, "is but a sort of surgical gambling. One man will tell of a case where no operation was performed, and the patient lived twenty years; and another will tell of a life prolonged for almost the same time after operation; each statement quite true, but neither of them of any useful application. To reckon from such cases is mere gambling; and, as in gambling of other kinds, the best luck at first brings the most grief at last" (Medical Times and Gazette, Sept. 27, 1862, p. 319).

[9] The ages of these patients varied from 42 to 59 years. In twenty the glands of the axilla were more or less affected, but not

six additional cases, the results of which were obtained from his friends, and in which the mamma was extirpated for well-marked carcinoma, in not one was a cure effected. In a majority the operation was performed at an early period, and under the most favorable circumstances; the affected parts were freely and extensively removed, and in many there was no distinct indication of constitutional deterioration; yet in all the disease returned, both externally and internally, and proved fatal. Thereupon Mr. Macfarlane observes: "I feel myself bound to state as my decided and conscientious opinion, that in no stage or form of the disease is an operation to be depended upon, either as means of permanent cure or as a palliative. Of the late and well-known Dr. Kearney Rodgers, of New York, it is told, "though he had removed a bushel-basketful of cancerous breasts, he had determined never to perform the operation again" (*New York Medical Record*, 1870, p. 422); and it is mentioned as a "curious delusion" of Dr. Bougard's (to whom reference has been made) that a large number of surgeons have ceased, or well-nigh ceased, to operate for cancer of the breast, on account of the ill success which has attended operations with the knife" (Butlin, *loc. cit.*, p. 387).

The distinct conflict of opinion for and against excision shown by the various citations I have put in evidence, lends strength to the contention that a way to cure cancer of the breast, save in occasional instances, not having yet been discovered, we may well call a halt in the course which has been so long pursued, and attended by a mortality over and above that natural to the disease.

Formerly I endeavored to teach that there were in reality but three conditions in which removal of the breast for cancer should be, or ever has been thought admissible, viz., (1) for extreme pain, — a rare occurrence; (2) for the relief of unendurable odor, in the exceptional instances of this popularly supposed inevitable accompaniment, — a condition now wholly within the control of local treatment; and (3) when the patient, after a fair statement of the nature and sure return of her disease, and the small prospect of a prolonged life, took upon herself to decide for excision. The provisos attached to this enumeration of justifying excuses for operation practically limited its application to cases of the last category, and the questions therein involved few patients would be competent to rule upon for themselves.

The removal of cancerous breasts is excepted to, therefore, because of the danger to life. In every fatal case the operation destroys in a week or two a life which otherwise might have lasted as many years. The prolongation of a life here and there does not compensate for the cutting short of many others. Recurrence after operation being held by many to be as certain as anything in surgery, to submit a patient to the risk of dying within a brief period for the sake of the interval of health which will or may exist between the operation and the return of the disease, is a point of practice which certainly admits of question (Paget, *Medical Times and Gazette*, 1862, vol. ii. p. 319). It is true that the danger of a fatal result is one which painstaking, cleanness, and drainage may steadily diminish, though the candidates for operation do not offer good material to work upon. Usually they are not young, they have borne families, and have known much mental or physical hardship. They are apt to be in the critical and transition period between middle life and advancing age, when organic diseases of internal organs increase very much in their proportion, and consequently are unfitted to endure the risks of a possibly slow and uncertain convalescence, hitherto enhanced by erysipelas, abscess, fever, etc. These complications are fortunately, at present, to a certain degree controllable.[10]

But a weightier reason for protestation is, as I look at it, the inadequate character of the undertaking. Even the enthusiasm of so strenuous a champion of operation as Mr. Banks must have had its moments of discouragement, for he permits himself to say, "The popular idea that operating prolongs life is quite wrong. I believe it to be a perfect delusion. I believe that all these patients," [*i. e.*, those whose breasts have been amputated, but whose axillary glands — diseased or not diseased — have been allowed to remain,] "would have lived longer if they had never been touched. Yet you hear the operation being constantly advised on the ground that, if it do not cure the patient, it will give her a little longer lease of life. On the contrary, the excitement that is set up by the operation makes everything that is left behind of a malignant character grow with double and treble speed, and I am inclined to think that the deaths after reappearance are more painful than those where the cancer has never been touched. If a surgeon do not see his way to a clean sweep, I can only implore him to let things alone, for in few diseases does meddlesome interference work more mischief than in this. It is but right that, while pleading early and free operation, one should also admit that if it fail thoroughly to cure, it does not improve the patient, but makes her decidedly worse" (*British Med. Jour.*, Dec. 9, 1882, p. 1140). And this opinion is equally that of other experienced operators.

If patients, therefore, are not cured, but are not even relieved by an excision, — if in performing "excision *for* cancer of the breast" you cannot also perform "excision *of* cancer of the breast," — it is certainly not mere pessimism which leads one to the conclusion that any operation which proves itself so futile in a general sense should be an act reserved for circumstances within narrow limitations.

exten-tively; they were all removed, and in the remaining twelve no disease in the axilla could be detected. In nine cases the disease returned in the integuments of the chest, or in the axilla, within a period varying from six weeks to three months after the operation; in thirteen cases from three to nine months; in four cases from nine to twelve months: in three cases within two years, and in one nearly three years elapsed before its return was discovered. Two of the operations proved fatal.

[10] Œdema of the arm, the worst and most distressing incident of cancer of the breast, rarely fails to accelerate the fatal event. It is more likely to occur when an excision has been extended into the arm-pit than when the disease has been left to itself; plainly, as it would seem, from the destruction of the lymphatic glands, combined with the influence of cicatricial contraction upon the veins returning the blood of a limb, the major part of which is always in a position of dependence, and flexed at the axilla itself. The president of the Harveian Society, Mr. Owen, in the discussion already quoted from (*ante*, p. 519), in advocating axillary excision, claimed that clearing away the glands diminished the risk of subsequent pressure, from secondary malignant enlargement, upon the axillary vein and the nerves of the brachial plexus; obviating, as he believed, œdema and neuralgia of the arm so often met with when the glands are untouched. This is wholly at variance with what, as it appears to me, must be the natural consequences of such a dissection as is recommended, and contrary to the impressions left by my own observation.

Were the subjects of cancerous breasts candidly told there was no reason to believe or to hope that an operation would eradicate the disease; or, by the most sanguine estimate,— that it could only do so once in six times; if they were reminded that, unoperated on, they would escape the risk of sudden death,— an accessory which, though it may be desirable in itself, is not within the surgeon's province to befriend,— and encouraged to think themselves likely to live a definite length of time,— two to three years, perhaps more; that they would be spared the mental distress inevitable in all surgical episodes, the more or less sure physical pain, and the contingencies so vividly delineated by Mr. Banks; that they would be exempted from the accidents liable to attend the slow granulating of a large wound, and the woeful results of its contraction which are apt to follow; if they were assured that they will not be the subjects of an increasing agony, or become repulsive to those about them, and informed of the solace which anodynes can afford; if they could be made to see all these compensations as surgeons see them, I feel confident that patients themselves would decide almost unanimously against excision.

The balance of opinion being that life — with the exception of a variably estimated percentage of "cures"— is as long and as free from suffering without as with operation, hesitation, if any, discloses itself only in regard to those who are thus alleged to be "cured."

Far from disputing the correctness of other surgeons' statements, I can only say that such results have not fallen within my experience. I have never known but one instance of seemingly prolonged life after removal of cancer of the breast. Many times I have had occasion to congratulate myself on having successfully dissuaded women from being operated on, and I am not aware of an instance in which the patient or her friends regretted the course pursued.[11] The considerable number of persons in civilized communities with cancer of the breast who have lived lives of average duration and of comparative comfort, without ever having been surgically advised, or who have died of disease wholly disconnected with the mammary affection, is a significant matter of fact.

The sanguine forecast with which certain surgeons regard the success of completed operations for cancer of the breast is undoubtedly due in a great measure to the fact that patients, with their restlessness for cure,— cure which there are never wanting dishonest empirics to promise,— desirous that their desperate condition should be actively if not heroically dealt with, and unwilling to turn their backs upon the familiar narratives of operative treatment,— stimulate their physicians to attempt that which is beyond their power. There is a great deal of unneeded sentiment in regard to the responsibility of "leaving women to their fate" when they are the subjects of scirrhous breasts, by refusing them the chances of an operation. The "doom" of such patients is not alleviated by an excision. Something innate in their sex stirs the courage of the weakest, and calms and controls the instincts of those whose fate is predetermined by a mortal disease. They who say that the "burden of inspiring hope rests mainly on the consultant," — *i. e.*, on the operating surgeon,— "who may not be able to tell other than the old story, but who, perchance, may point it with a new moral," — *i. e.*, find a new excuse for, or a new way of, operating— are not, as I venture to think, necessarily driven to this way of thinking by the demands of humanity or of an unquestionable judgment. For moral effect, an incompleted operation is at least of as much service as a so-called completed one.

It may seem as if I had formed a too unfavorable and gloomy opinion of the surgical treatment of this formidable disease. If I have done so it has not been hurriedly or inconsiderately. There is less fear now than formerly of severe operations. A close approach to vital parts, immense wounds, the extensive sacrifice of integument, the ligature of large veins, etc., are contemplated nowadays with indifference, so far as mere operative surgery is concerned; but, from my point of view,— which is not that of one, as Macaulay says, who "would rather die on precedent than live on innovation," — I cannot expunge the belief that patients with cancer of the breast are, as a rule, better off without than with operation, or that their cure, if cured they are to be, lies in some as yet undiscovered remedial measure of coming surgery, rather than in extending a mutilation which, whether limited or comprehensive, must always remain "*immedicabile vulnus.*"

[11] In a recent compilation of cases of cancer operated upon, the writer alludes to the criticisms, common among the laity, that harm has been done by operation instead of good, and that life has been shortened rather than prolonged. He remarks, "although often undeserved and unjust, many such have come to me among the responses to my letters."

THE DIAGNOSIS AND MEDICAL TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.[1]

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As the result of the foregoing analysis the symptoms, apart from stoppage of the bowels, upon the presence of which the physician must rely to establish a diagnosis of acute, internal obstruction, are abdominal pain, nausea or vomiting, abdominal tympany, and abdominal tumor. The presence of fever, the occurrence of hiccough or jaundice, abnormal conditions of the urine, are all occasional and subordinate.

The cardinal symptoms are, then, pain, vomiting, tympany, and tumor. The vomit may become fecal, and the tumor may be simulated by visible intestinal coils. The relative frequency, in percentages, of the occurrence of these symptoms in the main varieties of acute intestinal obstruction, as occurring since 1880, is here shown:—

	Strangulation.	Intussusception.	Twist.	Gall-Stones.	Stricture or Tumor.
Pain	82	70	60	83	60
Nausea or vomiting	69	75	37	74	80
Fecal vomiting.	47	13	15	61	33
Tympany	56	33	55	56	66
Tumor	10	69		13	27
Visible coils	11		7		20

[1] Concluded from page 495.

But the presence of these cardinal symptoms is evidence of other disease than acute, internal, mechanical obstruction of the bowels. They may result from external causes of obstruction, and the various herniæ are to be excluded. They may be the symptoms of a peritonitis in the absence of mechanical, intestinal obstruction. The various causes of peritonitis are therefore to be excluded. These include those arising from the gastro-intestinal, genital, and urinary tracts, the biliary passages, suppurating or necrotic lymph-glands, embolism of the abdominal arteries, and from the continuance of inflammatory processes through the thoracic and abdominal walls.

The diagnosis of acute, internal obstruction is then made, in the first instance, by exclusion.

The second question relates to the part of the bowel which is the seat of the obstruction. It appears from the above analysis that the chief varieties of obstruction were situated as follows:—

	Large intestine.	Small intestine.
Strangulation	8	66
Intussusception	57	8
Twist	34	5
Gall-stone	4	9
Stricture and tumor	14	1
	117=57 per cent.	89=43 per cent.

It is obvious that obstructing gall-stones in the large intestine are not of much consequence from their seat in that part of the bowel, as they have usually produced their important symptoms before reaching the colon.

The obstruction, therefore, is likely to be either in the small or in the large bowel in not far from equal proportion. In order to determine which is affected, the patency and capacity of the large intestine must be ascertained as thoroughly as possible.

Rectal examination by the finger alone may make the diagnosis clear, as in certain cases of intussusception, stricture, and obstruction from abnormal contents. The limits of this method are easily reached, however. Exploration by the introduction of the entire hand into the rectum may then suggest itself as a means of determining the seat of the obstruction. The cases are but a few where such a method has been used in intestinal obstruction with success. They are so few and the evidence thus to be obtained is so indefinite, that this method of exploration may be placed among the possibilities in any given case, but as of doubtful expediency.

There remains the introduction of the rectal sound or tube. These have the advantage in length over the finger or hand; they have the disadvantage of giving rise to errors of judgment. The information to be furnished by the rectal sound is limited to the determination of the length and calibre of the rectum and sigmoid flexure, at the most as far as the junction of the two legs of the bowel which form the loop. This may lie at the navel, as in a case recently examined by me after death. It has been my experience to fail to pass either the rigid or the flexible tube beyond the sigmoid flexure in numerous attempts both on the living and dead. After repeatedly introducing the flexible tube its entire length, it has been found compactly coiled within the rectum on passing the finger through the anus. In these respects my experience corresponds with that of Treves [10] and others.

The use of the rigid tube is not without danger. I have known it, in the hand of a skilful and experienced surgeon, to perforate the intestinal wall above a stricture of the rectum.

The capacity of the large intestine, beyond the reach of the finger, or a short tube, is best determined by an attempt to distend the bowel with air, gas, or water, under a certain degree of pressure. Air may be introduced by connecting the end of an inserted rectal tube with the nozzle of a syringe or a pair of bellows.

Air or gas may be allowed to escape from a siphon of aerated or carbonated water. Ziemssen [11] recommends that the intestine be charged, alternately and in small quantities, with solutions of bicarbonate of soda and tartaric acid,—twenty grammes (five drachms) of the former and eighteen grammes (four and a half drachms) of the latter.

The simplest and best agent, however, is warm water. It is easily procured, and the quantity used can be simply and accurately measured.

Some arrangement is necessary by means of which the injected fluid shall be prevented from escaping from the anus. Forcible compression of the buttocks against the rectal tube suffices for moderate degrees of pressure. But the column of fluid may be under considerable, even extreme, pressure, especially when this diagnostic procedure becomes a remedial measure, as in cases of intussusception.

Lund [12] figures and describes an apparatus for this purpose, consisting essentially of an annular air-cushion through which passes a tightly fitting, rectal tube. The latter is connected with the injecting syringe. A similar apparatus was improvised by Forest,[13] who wound a roller bandage tightly around a glass, vaginal syringe from which the piston was removed. The mouth of the syringe was closed with a perforated cork. A glass tube was pushed through this and was connected with the injecting syringe. This latter is most conveniently a fountain-syringe or a funnel and rubber tube. These may be elevated gradually to any desired height above the patient's level, and will permit an accurate measure of the pressure used and the quantity injected.

The force necessary to distend the large intestine sufficiently to determine its calibre may be slight. But the physician should be prepared to increase it sufficiently, within safe limits, to make it clear that the large intestine is or is not obstructed. These limits are determined by the time which has elapsed since the obstruction became apparent, the age of the patient, and the quantity of fluid injected.

Thomas [14] records a case where, on the third day, an enema, under light pressura, was followed by death in an hour and a half. The case proved to be one of intussusception; a rent was found in the sheath and a half tumblerful of water in the pelvis. The earlier, therefore, this method of exploration is employed the better, especially in the case of suspected intussusception.

[12] Lund. Lancet, 1883, i. 588.
[13] Forest. Am. J. Obst., 1886, xix. 673.
[14] Thomas. Lancet, 1886, ii. 1219.
[10] Treves, *op. it.* 398.
[11] Ziemsser, Arch. f. klin. Med., 1883, xxxiii. 236.

The age of the patient is important, since obstruction in children is most likely to be from intussusception. Lower degrees of pressure will produce rupture in them than in the adult, and the capacity of the large intestine is less.

The quantity of fluid admitted is as important as the force necessary for its injection. For diagnostic purposes all that is necessary is that a certain quantity of fluid should or should not be admitted into the bowel. The quantity which the large intestine of the adult will hold with safety may be stated at six quarts. In a case of catarrhal enteritis recently under my charge, nearly five quarts were gradually injected, without discomfort, by means of a bulb-syringe and rectal tube. Six quarts of fluid returned through the tube after removal of the syringe. Larrabee [15] states that six quarts were injected into the intestine, and retained, in a case of obstruction of the ileum. The quantity which the large intestine of the infant may safely receive has been less exactly determined than the degree of pressure which can be applied without causing rupture.

The limits of safety as defined by the above conditions will permit the elevation of the fountain-syringe to a height considerably less than that found necessary, by experiments, to rupture the bowel. Recent investigations on this point have been made by Rotch,[16] who found that more than seventeen feet of pressure were necessary to tear the bowel of an infant, removed from the body. Forest [17] found that the colon of an infant would bear, without rupture, from twenty to twenty-two feet of pressure. He also found that the colon of an adult would bear, with a like result, from thirty to thirty-seven feet. Young [18] inserted a rectal tube into the bowel of a patient suffering from obstruction and connected it, on several occasions, with the waste-pipe of a tank which was elevated thirty feet. The patient eventually recovered from the immediate symptoms. Within safe limits will, therefore, be below ten feet in the infant, and twenty feet in the adult.

It should be remembered that, for diagnostic purposes, the indication is to distend the large intestine if possible, and without increasing the patient's danger. Anæsthesia should be employed; the patient should be inverted or placed on the right side, that the fluid may more readily pass up the bowel.

The objections which have been raised to the value of injections in determining the seat of the obstruction are based upon the condition of the patient and the negative value of the experiments made. It is asserted that the patient's voluntary muscles may resist the admission of the fluid; that a part of his intestine may be contracted and the rest tympanitic, with a resulting increase of the intra-abdominal pressure. The rectum may be filled with fæces, thus obstructing the entrance of fluid, or so distensible as to take in so large a quantity as to give rise to error of judgment. Again, a strictured bowel may be passable from below, but closed from above by a projecting fold of tissue. Finally, the experiments concerning the capacity of the large intestine are regarded as useless, since they are made on relaxed tissues.

These objections have a value within certain limits. If the injection is made late in the course of the disease, under slight degrees of pressure, and without anæsthesia, it may prove of no diagnostic value. If the question to be decided by injection depended upon the difference of a few ounces in the quantity of fluid admitted, the experiments on the corpse would be useless. But the diagnostic value of the injection is dependent upon a sufficient degree of pressure to overcome muscular resistance within the limits of safety, under anæsthesia. If the tympany is extreme enough to produce a doubtful result, the stomach and upper bowel may be emptied of their contents by siphonage. The quantity of fluid to be forced into the large intestine of the adult is one of several quarts or of a few pints. Since Treves [19] cites the case where the rectum held three pints, it is evident that, when only this quantity of fluid can be forced in, the obstruction may be at the sigmoid flexure, and that a larger quantity must be injected to ensure that the intestine above this point is passable. With these precautions and with these limitations the exploration of the large intestine by means of forced injections seems likely to prove in the future, as has been claimed in the past, a valuable, diagnostic measure.

It may, possibly, become unnecessary for the determination of the patency of the large intestine to use the higher degrees of pressure and the larger quantities of fluid. Treves [20] claims that by auscultation of the cæcal region it is possible to obtain pretty conclusive evidence of the arrival of injected fluid at that point. The colon must be entirely clear and the enemata quickly introduced, in an intermittent manner, without any admixture of air. The variety of abdominal sounds to be heard in cases of intestinal obstruction is so considerable that especial training in abdominal auscultation, and particularly in this affection, is regarded as necessary that this method of examination may prove of value.

Although, in general, fæcal vomiting is more likely to occur in obstruction of the small intestine than in that of the large, this relation is of no importance in determining the part of the bowel affected. It occurred in forty-seven cases of strangulation, fourteen of gall-stones, twelve of intussusception, and five of malignant disease or stricture. It was present in four cases of stricture or tumor when the obstruction was at or below the cæcum. It was noted in four cases of intussusception in the same region, below the cæcum, in two of twist of the large intestine, and in one of strangulation of this part of the bowel. Thus, in more than one-eighth of the cases of fæcal vomit, the obstruction was of the large intestine.

The physician having determined, with more or less success, the patency and capacity of the large intestine, the question which next demands consideration relates to the special variety of obstruction which may be present.

This question is best answered by an appreciation of the relative frequency of the several varieties,

[15] Larrabee. **Louisville Med. News, 1881, xi. 3.**
[16] Rotch. **Boston Med. & S. J., 1882, cvi. 322.**
[17] Forest, *loc. cit.*, 691.
[18] Young. **British Med. Journal, 1884, ii. 706.**

[19] **Treves, *op. cit.*, 397.**
[20] **Treves, *op. cit.*, 398.**

the knowledge of the age of the patient, the antecedent and immediate symptoms.

The published experience of the past eight years shows that for all practical purposes the following is the relative proportion of the varieties of intestinal obstruction likely to be concerned in any individual case: —

Strangulation	101 cases	= 37	per cent.
Intussusception	93 "	= 34	"
Twist	40 "	= 15	"
Gall-stones	23 "	= 8	"
Stricture or tumor	15 "	= 6	"
	272	100	

These varieties of obstruction were seated as follows: —

	Large intestine.	Small intestine
Strangulation	7 per cent.	72 per cent.
Intussusception	51 "	8 "
Twist	30 "	5 "
Gall-stones	0 "	14 "
Stricture and tumor	12 "	1 "
	100	100

Since obstruction of the large intestine was intussusception or twist in four-fifths of the cases, the differential diagnosis of these varieties is of especial importance. Etiology afforded no aid. The relative frequency among the sexes was the same.

If the patient is under thirty years of age the case is one rather of intussusception than of twist. Rectal tenesmus, bloody stools, and an abdominal or rectal tumor are significant of intussusception; they are not to be expected in twist. The greater the capacity of the large intestine the more likely is the presence of intussusception than twist, for the latter was found near the sigmoid flexure in 50% of the cases, while the former was found near the cæcum in 75%.

Finally, if the obstruction is not relieved by distention of the bowel and massage, with anæsthesia, there is probably an irreducible intussusception or a twist, each of which demands surgical treatment.

If the person is over thirty years of age, and there is neither tenesmus, bloody-stools, nor a tumor characteristic of intussusception, the case is probably one of twist, tumor or stricture, or of strangulation. Twist was more than four times as common as strangulation, and more than twice as frequent as tumor or stricture. The latter was nearly twice as common as strangulation. The last is likely to be above the sigmoid flexure, while twist, cancer, and stricture are more likely to be at or below this point. Cancer and stricture are not infrequently within reach of the finger, hand, or sound. They often have the antecedents of chronic pain, irregular and bloody discharges, and rectal uneasiness.

If the obstruction was seated in the small intestine, it was due to strangulation or gall-stone in more than four-fifths of the cases. The diagnosis of gall-stone was to be determined by its occurrence after the age of fifty years in six-sevenths of the cases, by previous symptoms attributed to this cause in one-half of the cases, by the usual late occurrence of the tympany on or after the fourth day, and by the occasional presence of a small, hard tumor.

Intussusception is to be differentiated from strangulation by its greater frequency in early youth, and the fact that a tumor is more often found. A twist of the small intestine is only to be differentiated by its extreme rarity.

What may be the immediate cause of the strangulation has but little practical value. At the best there is little else than numerical frequency to influence the opinion. It is desirable to remember that nine-tenths of the cases were due to adhesion, vitelline remains, or vermiform appendix, in the proportion of 63%, 21%, and 6%. It is still more important to remember that, in the presence of urgent symptoms of acute obstruction, the source was to have been found in the lower abdomen in more than four-fifths of the cases.

The question, what is to be done by the physician? has already been partly answered. He is to remember that in the light of exact knowledge nearly all cases of acute, mechanical, intestinal obstruction die, unless relieved by surgical interference. That curative, medical treatment has proven of sure avail only in a limited number of cases of intussusception, possibly in a few of twist in the large intestine, and in certain cases of gall-stones in the small intestine. That his first duty, after relieving pain, is to determine the capacity of the large intestine. That this is best accomplished during the first two days following the initial pain, before tympany makes the task more difficult, and pathological changes cause it to be more dangerous. Finally, that the means employed for this purpose represent the most efficient curative agent in his control.

In case a diagnosis of intussusception is established, the possible benefits of medical treatment at an early stage result from the reduction of the displaced bowel. In fourteen cases where the condition of the bowel during the first five days was noted, it was found that in five, more than one-third, the bowel was irreducible on the third day. This fact should not necessarily deter the physician from an attempt at reduction at a later date. Wilson[21] withdrew an intussusception after seventeen days of obstructive symptoms, and the patient recovered. On the other hand, although this possibility may be admitted, sloughs of the intestine may be evacuated on the ninth day.

Notwithstanding 31% of the cases recovered without any operative treatment, it does not follow that such a recovery is to be anticipated with favor, especially if it is to be associated with the evacuation of a slough. In this class of cases eventual death from annular stenosis of the intestine is to be feared, if earlier death from peritonitis does not occur, or strangulation may take place under adhesive bands between the diseased bowel and neighboring coils. It is even possible that so much of the bowel may be detached as a slough that an insufficient quantity remains to serve for the necessary absorption of nutriment. Lanceus,[22] for example, reports a slough of three feet of the ileum.

The medical treatment of intussusception consists essentially in the use of mechanical measures for the reduction of the displaced portion of bowel. The beneficial effect of such measures is all the more possible since it is evident that spontaneous

[21] Wilson. Transylvania J. M., 1835, viii. 486.
[22] Lanceus (Rev. Med. Quir. Buenos Ayres). Canada Lancet, 1880-81, xiii. 260.

reduction may occur. Senn[23] observed this fact in his experiments, and Langmaid[24] records a striking illustration. His patient was an infant of five months, who, on the first day, suffered from restlessness, vomiting, and bloody dejections. On the third day a tumor, with a central indentation like the neck of the uterus, was to be felt per rectum. A cylindrical tumor was also to be recognized in the region of the descending colon. After a few hours the invaginated bowel descended to the anus. In the interval between two visits the tumor disappeared. The patient had two natural dejections on the sixth day, and recovered without further disturbance.

The mechanical treatment consists of rectal injection or inflation, preferably the former, and replacement by a repositor. Almost indispensable advantage is to be derived from the associated use of anæsthesia. Massage of the tumor and inversion of the body are important adjuncts.

The use of electricity is to be condemned as irrational where intestinal contractions induce and promote the disturbance. Large doses of quicksilver have been employed within the past few years as well as in more remote times. Gronau[25] reports a case, in which, on the seventh day, one hundred and twenty grammes were given in two doses. The immediate effect was to check vomiting, although the pains persisted. A week later two copious dejections were noted, and on the following day eleven inches of ileum were discharged. The quicksilver did not appear till forty-four days after its administration.

The reduction of the displaced bowel by means of a probang or bougie, well padded at the end, seems useless, from reasons already stated, in any case of intussusception where the seat is above the sigmoid flexure. Even below this point inflation or injection have proven equally serviceable, and are to be preferred as freer from risk. The earlier they are employed the better, and their use is to be avoided when there is reason to suppose that gangrene is present at the neck of the tumor, or that the latter is irreducible. It has already been stated that the tumor may be irreducible on the third day, and that a slough may be passed on the ninth day. It remains to be shown what were the limits of the successful employment of injections and inflations since 1880.

Recoveries from intussusception after inflation or injection: —

DATE.	Diagnosis certain.				Diagnosis probable.			
	Water.	Gas.	Air.	Total	Water.	Gas.	Air.	Total
1st day		1	3	4	2		4	6
2nd "			1	1	2	1	3	6
3rd "			1	1	2		1	3
4th "					1			1
Not given....	4		1	5	3		3	6
	4	1	6	11	10	1	11	22

[23] Senn, *op. cit.*
[24] Langmaid. Boston Med. and Surg. Journal, 1882, cvii. 33.
[25] Gronau. Berl. Kl., March, 1882, xix. 314.

Deaths from intussusception after inflation or injection: —

DATE.	Diagnosis certain.				Diagnosis probable.			
	Water.	Gas.	Air.	Total	Water.	Gas.	Air.	Total
1st day			1	1	1			1
2nd "	1		2	3				
3rd "	3		1	4				
4th "		1		1				
5th "	1			1				
	5	1	4	10	1			1

It thus appears that there were thirty-three cases of recovery after injection or inflation for certain or probable intussusception. In seventeen cases air was inflated, in fourteen water was injected, and in two gas introduced from a siphon-reservoir. It is further evident that the remedy was used on the first day in ten cases, on the second day in seven, on the third in four, on the fourth in one, and on a date not given in eleven cases. The inference from these figures is that the successful use of inflation or injection may take place on the fourth day, but is most likely to occur during the first two days.

The unsuccessful use of the above treatment resulted in eleven cases: in two on the first day, three on the second, four on the third, and in one on the fourth and fifth days respectively. Certain of these failures are due to an insufficient pressure, for after death, in these, the intussusception was easily reduced. In other cases the tumors returned, or the symptoms were not relieved. In such the tumors may not have been wholly reduced at the time of treatment. The inference is direct from the consideration of these tables showing the effect of medical treatment, that if the latter does not overcome the obstruction within the first two, possibly three, days, aid should be sought from the surgeon.

Relief, by injection or inflation, from obstruction due to a twist is of very unlikely occurrence. There is no exact evidence on this point. As in intussusception so in twist: if no relief follows inflation or injection on the second or third day, the aid of the surgeon should be sought.

The surgeon's knife offers the only hope of cure from strangulation.

In the medical treatment of obstruction from gall-stones, it is to be remembered that in the cases here collected a fatal result followed all surgical treatment after the first week, and that five cases recovered under medical treatment after this date. The condition of the patient alone must determine the nature and duration of the treatment. Opiates, cathartics, and electricity have all been used in cases ending with recovery.

In the light of the published experience of the past eight years, the medical treatment of acute obstruction is limited to the use of injections during the first three days, under sufficient degrees of pressure, within fixed limits, to determine the patency of the large intestine. If it proves impassable the case is no longer medical, but surgical.

If the large intestine is readily distended, and a diagnosis of gall-stones is admissible, and the condition of the patient is not urgent, opium is to be given; laxatives and electricity may be tried, but they are of doubtful expediency. If medical treatment is of no avail, and surgical treatment is refused, the efforts of the physician are restricted to the relief of pain and distress by narcotics, intestinal punctures, and gastric siphonage.

In conclusion, acute, intestinal obstruction is diagnosticated by exclusion. Its seat is fixed by injection. Its variety is determined by its seat, the age, antecedents, and symptoms of the patient. Its treatment is surgical, on or after the third day, if the symptoms are urgent and forced injections fail to relieve.

Clinical Memorandum.

CASES ILLUSTRATING THE USE OF COMPRESSION, AFTER THE METHOD OF MR. GAMGEE.

REPORTED BY W. A. MORRISON.

THE following cases were treated at the Surgical Out-Patient Department, Boston City Hospital, during the service of Dr. H. L. Burrell.

TREATMENT: COMPRESSION BY MEANS OF OAKUM PADS AND PASTEBOARD SPLINTS.

John K., twenty-two years, brewer. March 5th came with following history. On Thursday, March 1st, while working in brewery, left hand began to swell, and Friday it was much worse. The last three nights pain so acute could not sleep; hand so heavy that it had to be supported by right.

On examination found left hand about three times larger than right, intensely red, very hot and painful, swelling and redness extending several inches up the arm; pain very acute, extending from hand to axillary glands; the latter much swollen and especially sensitive, the slightest movement causing agony, gentle pressure almost unbearable.

Treatment: oakum compression from fingers to axilla with pasteboard splints to immobilize; flexed arm across chest, then applied Velpeau bandage. "Arm very comfortable."

March 9. Circumscribed space over head of fourth metacarpal bone soft and boggy; on slight pressure about two ounces of pus and blood escaped through very small opening; no pain; reapplied pads and bandages, with pasteboard splints.

Continued treatment till March 16th, when patient was cured.

Martin O., twenty years, painter. February 15th applied for treatment. Noticed pain in thumb ten days ago, poulticed with linseed meal, resulting in temporary relief, followed by intense pain in a few days. On examination found an abrasion near head of first metacarpal, thumb very red, swollen, and painful, pain extending from end of thumb to axilla; hand œdematous; axillary glands very much enlarged. Applied oakum pads, with compression, from tips of fingers to axilla, and pasteboard splints to immobilize.

February 16th. "Last night was the first comfortable night in ten." On examination found small suppurating point over head of first metacarpal, which, on being opened, discharged small amount of pus. Dressed thumb antiseptically and reapplied pads with compression.

February 18th. Arm slightly painful. On examination found bandage loose, and swelling greatly reduced; skin pale, wrinkled. Applied dressing to thumb; reapplied pads with bandage, continuing treatment until February 24th, when cured.

John S., age forty-seven. March 15th. Patient gave following history. Twelve days ago slipped and threw out hand to save himself, resulting in an injury to the hand. Four days ago the arm began to swell and the next day it was enormously swollen; cannot sleep at night on account of excruciating pain extending to elbow. On examination found hand enormously swollen, very hot, and exceedingly painful.

Treatment: oakum pads with compression from ends of fingers to axilla.

March 16th. Arm very comfortable. On removal of pads found swelling very much diminished. Reapplied pads with bandage and splints.

Continued same treatment till March 29th; when last seen, recovery almost complete.

David C., twenty years. March 10th. Applied for treatment with following history. Two months ago felt sharp pain and soreness in ankle on walking, and has been troubled since then. On examination found tender spot near inner malleolus of left ankle; slightly swollen, very sensitive, painful to the touch to such a degree, that patient fainted on application of pressure over sensitive area.

Treatment: pasteboard splints about ankle with compression.

March 15th. Ankle very comfortable since application of splints; no inconvenience in walking. Removed splints and patient walked home; no recurrence of pain.

James H., age 18. March 2nd. Six weeks ago fell on ice and struck olecranon process; has since then been very sensitive. One week ago arm was very painful, red and swollen.

On examination found contused wound over olecranon. Whole arm red, swollen and hot, besides being very painful to touch; axillary glands much swollen and painful; unable to sleep at night.

Treatment: pads and bandage from tip of fingers to axilla, with pasteboard splints on the outside to immobilize. Used compression six days, when dismissed as cured.

John McD., age twenty-four years, teamster. February 16th. Two weeks ago noticed foot was very tender, swollen, and painful while at work; continued to increase till present time, when it was almost unbearable; patient could not sleep at night; "foot jumped all the time." For last three days had poulticed it with linseed meal, with no relief.

On examination, foot and leg were intensely red, swollen and painful; near head of fifth metatarsal bone it looked as if about to suppurate.

Treatment: pads with compression from the base of the phalanges to Poupart's ligament.

Patient much relieved and walked home.

February 17th. Patient slept all last night; "foot very comfortable." On removal of bandage swelling had decreased and a quantity of pus was

evacuated from circumscribed area of fifth metatarsal.

Reapplied bandage and pads till February 27th, when patient resumed work.

Hannah S., aged forty-nine. March 17th. Six weeks ago, a slight abrasion was noticed on dorsum of hand at head of second metacarpal; hand much swollen, red and painful. For four weeks it was treated with linseed poultice.

On examination found palmar surface somewhat swollen; fingers were semiflexed, and patient complained of intense pain most of the time.

Treatment: large pad on palmar surface of hand and with pressure was obtained considerable extension on fingers; then a large pad on dorsal surface with compression almost up to elbow, and sling. Patient obtained immediate relief on application of pressure.

Treatment continued till March 24th. When last seen, patient much relieved, with fingers almost wholly extended.

John M., age fifty. March 8th. Varicose veins for six years. Last Christmas noticed redness without pain in right leg. For the last month leg has been sensitive, very red and painful. Lymphatics very tender, hard and swollen on inner side of leg from just above inner malleolus to just below head of tibia.

Treatment: oakum pads with compression from toes to popliteal space.

March 19th: patient cured.

Edward P., twenty years. March 17th. Sprained ankle about ten days ago, has been confined to house since then, with much pain, very restless at night, limb much swollen and very painful.

Treatment: splints with bandage.

Patient walked home, greatly relieved.

Continued compression till March 24th, resulting in perfect recovery.

Miss Georgie P., thirteen years. March 21st. One week ago noticed hand and wrist felt hot and uncomfortable, followed by pain and swelling reaching nearly to elbow, the slightest movement causing intense pain.

Treatment: compression with bandage and pads from tips of fingers to elbow.

Continued till March 24th, when patient dismissed as cured.

John M., coal-heaver, age thirty-eight years. Saturday, February 18th. One week ago fell while carrying coal, and struck on olecranon; very painful, with considerable swelling and redness; "didn't sleep last two nights."

On examination found arm much swollen and sensitive to touch; small wound over olecranon, from which pus was exuding.

Treatment: pads with compression, causing patient to obtain immediate relief; this was continued till February 21st, when patient resumed work.

John H., age forty-nine, coal-heaver. March 3rd. Three weeks ago sprained ankles; called local physician, but grew steadily worse, having continuous pain.

On examination found marked redness, with swelling about both malleoli, a large callous on fibula just above external malleolus.

Treatment: splints of pasteboard with compress. Continuous treatment till March 12th, when patient dismissed as cured.

Michael C., age twenty years, machinist. February 24th. Patient gave following history. On February 20th noticed swelling on hand near head of first metacarpal bone; it was very red, and about the size of a silver quarter; this swelling steadily increased in size until it covered hand and wrist; since yesterday intense pain in hand, extending to axilla; glands somewhat enlarged; could not sleep with pain.

Treatment: pads with compression, and pasteboard splint to immobilize.

February 25th. Swelling and redness receding; very little pain. Pads applied as high as elbow with pasteboard splint to palmar surface; hand placed in sling high up across chest.

February 27th. Redness size of a quarter with circumscribed cavity of pus near head of first metacarpal. Reapplied pads with bandage from tips of fingers to wrist, and continued treatment till March 3rd, when cured.

James F., age thirty-eight, tailor, habitual drinker. February 16th. One week ago fell on ice, striking elbow. On examination, found small wound near olecranon; whole arm very much swollen, red and painful, axillary glands greatly enlarged and sensitive.

Treatment: oakum pads with compression, and pasteboard splints to immobilize, causing patient to experience immediate relief.

February 20th. Yesterday (Sunday) bandage became loosened and patient complained of pain. Reapplied compression, causing relief.

Continued same treatment till March 5th, when patient "perfectly well."

March 12th. Patient fell while intoxicated, striking on elbow, which reopened wound; patient subsequently recommended for admission to hospital.

REMARKS BY DR. BURRELL.

The oakum pads as applied are of various sizes in length and breadth, and are usually over an inch in thickness; they are covered with coleraine cloth.

They are applied so that they exert an equable pressure over the whole limb from the extremity upwards; particular attention is paid to exerting an extra amount of compression over the arterial tracks and the course of the lymphatics: this point was particularly insisted upon by the late Mr. Gamgee.

The pasteboard is cut up into various sizes, usually six by two. These are moistened in hot water and are superimposed about the affected joint so as to gain equal pressure.

The results in these cases show the benefit to be derived from rest and skilfully applied pressure in sprains, lymphangitis, and diffuse cellulitis.

The pads are always used where there is a possibility of averting suppuration, and poultices have been practically discarded in these cases. The localization of suppurating areas by this treatment has been very surprising.

— A certificate of incorporation has been issued for a Post-Graduate Medical School and Hospital at Chicago.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M. D., SECRETARY.

NOVEMBER 12, DR. O. F. WADSWORTH, President, in the chair. DR. R. M. HODGES read a paper entitled

EXCISION OF THE BREAST FOR CANCER.

DR. MORRILL WYMAN said he had not seen a sufficient number of cases to throw light on the subject. Dr. Mason Warren once remarked to him after the removal of a breast for cancer that he wished he never should hear anything more from it as long as he lived. Sir James Paget not a great while ago said he believed if ever a cure for cancer of the breast was found it would be found in constitutional treatment, for local treatment had been pursued for five hundred years without success.

DR. GAY: One hesitates to differ from so eminent an authority as is Dr. Hodges upon any point which he chooses to discuss. I certainly am reluctant to do so from the fact that his experience, and his facilities for observation are very much larger than mine have been. After twenty years' practice, however, one comes to base his opinions quite largely upon his own individual experience, if he has had any of consequence. For this reason, if for no other, I cannot think that the non-operative treatment of cancer of the breast is the best one to advise or to adopt. The first question to be considered is the curability of cancer. The three-year limit for a recurrence is an arbitrary one, although in a majority of cases it is ample. Perhaps on the whole it is as good as any stated period. That there is a time in the growth or development of malignant disease of the breast when a correct diagnosis is possible, and when removal is not followed by a recurrence, is by no means proven to the satisfaction of any considerable number of practical surgeons. Leaving all theoretical points out of the question for the present, how many cases of undoubted cancer of the breast are removed so early that a return is thereby prevented? While I am not unacquainted with the statistics of Gross, Banks, Butlin, and others, I should not think of telling a patient, however early she applied for operation, and however thorough that operation might be, that the disease would probably never return. On the contrary I should expect the early cases to be followed by a recurrence just as early as the more advanced ones. In other words, a cancer of the breast means destruction, whatever or whenever any method of treatment known at present may be resorted to.

As humanity is now constituted, not one woman in a dozen would follow the advice suggested by Dr. Hodges in his most interesting paper. There are very few persons of either sex who are philosophers when death is staring them in the face. Life is so desirable to the majority of mankind that they will not sit with folded hands at the dictum of any one and watch the steady increase of a fatal disease without making some effort to stay its progress. If skilful and honorable surgeons have nothing to offer these unfortunate people, they can hardly be blamed for resorting to the charlatan for aid in their last days.

One of the greatest advantages of an operation upon these patients is the mental effect. It gives new hope and courage, and for the time being removes the object of so much terror and dread. I cannot but feel after, more than twenty years' experience, that the last days of these patients are rendered freer from pain, sloughing, foul discharges, and hemorrhages by operative treatment. I doubt if life is very much prolonged by excision, although this point is a very difficult one to determine. Speculation as to the probable result of any case under different treatment is not a satisfactory way of spending one's time.

In conclusion, allow me to say that as a rule I believe it is good practice to remove all tumors of the breast in women over thirty-five years of age, unless the diagnosis of their non-malignant character is established beyond a reasonable doubt. An ordinary practitioner's powers of diagnosis are not acute enough to enable him to say, in many instances, that a small, painless, breast tumor is not, and will not become, a malignant growth. I presume I am not the only one present who has had such an experience. Tumors of the breast, however small and painless, are apt to be the cause of great mental anguish, and for that reason alone, to say nothing of their future development, an operation is justifiable, unless the woman has unusual fortitude and a calm temperament.

DR. JOHN HOMANS: When a person with cancer of the breast presents herself in my office the question in my mind is will this woman's end and remaining life be more comfortable if meddled with than if let alone? My feeling is that she will be more comfortable, as a general rule, if let alone. If you tell the woman you think it is best not to remove the breast, you hardly like to say to her that her end may be more comfortable if she is let alone than if this thing is removed, because that is telling her that the thing is fatal in any event.

Again, the person may come from a distance to consult you, and if you say, "This thing had better not be meddled with," she says, "Can nothing be done? I can't be cured, then?" I think the sympathy of most of us would lead us to operate with the feeling that during the woman's remaining life she would feel that she had had everything done for her that could be done to prolong her life. I don't suppose that it is a scientific reason for operating that if we don't operate the quacks will get the cases. It hardly seems to me that that is an argument of science, although perhaps it is of humanity.

Speaking entirely from memory, I should say that patients lived longer without operation than with.

The cases where I believe operation is imperative are those where there is a fungous growth protruding from the breast, generally a small one, which spurts arterial blood at intervals, causes great weakness and an offensive odor. In that class of cases I think we ought to operate.

Again, in my experience the disease has not recurred in the axilla, which has always seemed to me a reason against cleaning out the axilla where it doesn't seem to be affected. When the disease

does recur it is fully as apt to occur, it seems to me, in the cervical glands and subclavian glands as in the axillary. I remember a case on which I operated eighteen months ago in which the cancer returned as abdominal cancer but not at all in the scar. My feeling at present is that, as a general rule, it would be as well not to practise excision of the breast for cancer as to practise it, but in certain cases I should make exceptions to this rule.

Dr. J. C. Warren: I think that many surgeons are apt to shut their eyes to the very grave nature of the disease, and perhaps there is a tendency to become more enthusiastic than the facts justify with the advantages of operative treatment. Several years ago I had pretty much made up my mind that I did not want to operate on any more breasts with cancer when the more radical treatment was set forth by the gentlemen Dr. Hodges has mentioned. It seemed to me that in the light of those cases, and under the more favorable conditions which antiseptic surgery affords, we were authorized to go over the subject again, and see if there was not a certain residuum of cases which were benefited, I might add cured, by operative measures. I don't think the time has come when that question can be fully answered. I think the subject is *sub judice*. There are 11 per cent. or 12 per cent. of these cases claimed to be cures under this method. If we can get even so small a proportion as that, that is something; and if the present new method of operating is carried out sufficiently long to demonstrate that that percentage can be accepted generally by the profession as a fact demonstrated, I think certainly something will have been gained.

In regard to the question of the local origin or the general origin of cancer, of course it is well known that great authorities differ as to that. Sir James Paget has created a good deal of attention by a very able address he recently delivered, in which he took the position of the general origin of cancer. I believe cancer to be a local disease, something very analogous to a germ disease, although of course that origin has not yet been demonstrated for it. And therefore I should lay out my treatment in accordance with that view. Dr. Hodges spoke of the dangers of the new method of laying open the axilla. I cannot see, looking back on the cases I have operated upon by the new method, that the number of deaths have been increased. Of late years a death from that operation has been a rare thing with me. I should think it was much more frequent in pre-antiseptic days than at the present time.

The advantage of opening the axilla in all cases where the diagnosis of cancer of the breast is made seems to me to be an obvious one. I remember one of the first cases I operated upon by this method, where no glands could be felt in the axilla, but where a pyramidal mass of fat representing axillary fat was dissected out, and a small cancerous gland was found in its centre. That patient was operated on by me four years ago, and although she might have been alive to-day if not operated upon, her condition, I think, would not have been as good as it has been. Her health improved, her whole appearance changed. A few weeks ago she was married. She is now in robust health. We could not, I think, however, regard that as a permanent cure, because even after that length of time I have seen growths recur. I have in mind a case where, four and a half years after the operation, a gland appeared in the axilla. In that case I did not operate upon the axilla originally. At that time this subject was not thought so much of as now, and the axilla was not opened. She has had a return in the axilla, but not in the breast; and that gland was removed and found to be a case of colloid cancer, a comparatively benign type of the disease. That case seems to me to show that it might have been a great advantage to her to have had the gland removed at the time of the operation. There is no return in the axilla, but I think at the present time she comes under that type of cases that Dr. Hodges classes as "unrecognized return of cancer." There is a cachectic condition that leads me to think that there is deep-seated cancer somewhere in the interior of the thorax.

I think there is a very large class of cases we ought not to think of touching, and I make up my mind about that class in accordance with the clinical history of the case. A case that has had a very short growth and a rapid one I think is bound to return, whether we operate early or not. I remember one case that I operated upon a good many years ago in the hospital. The case was sent in by Dr. Samuel Cabot; and the duration of the disease was so short, and the size of the cancer so small, that I marvelled at his ability to make the diagnosis. I operated and found a cancer not much larger in its cut surface than a twenty-five cent piece, and removed the disease. The patient died of cancer 3 years later. I operated a year ago on a case where the disease was developing rapidly. In a few months it had involved the breast and glands of the axilla very extensively. I operated on the theory that I might be able to remove all the disease, and when I got through the operation I felt satisfied that I had removed all visible disease, and yet that patient died with very extensive and malignant return in all parts of the body. I should not, therefore, advise operation in that type of cases, but in cases which are confined chiefly in the breast, where the history of a knowledge of a tumor has gone back for several months, perhaps, and the disease has not increased during that time, and there has been no extensive disease in the axilla, I think there is then some hope of removing the disease, and, if not of bringing about a cure, perhaps the result will be to produce considerable prolongation of life.

Dr. Bolles: It is at the best a very discouraging outlook, and one can hardly wonder at the conclusions that Dr. Hodges has brought to us. Still, in some respects, it appears to me that he has painted the picture too darkly. The proportion of deaths as result of operation I think is very much smaller in cases that I have seen than those he has given. I do not now distinctly remember but two deaths directly from the operation. One of these was a case operated on by the late Dr. Charles Homans when I was his house officer in the hospital. The patient died of an inflammation of the lung from extension of cancer through the chest wall. That case probably would not have been operated on if a careful examination of the chest had been made. Another was an old woman with an enormous

breast, amputated last year by Dr. Bradford, with whom I saw her in consultation. The operation was done merely to relieve the patient for the time being of great suffering. My own number of cases is not very large, perhaps twenty. I have had no deaths as a result of the operation. I have not been able to follow many of my own cases long enough to speak with positiveness about the cure. So far as I know there has been none. I do remember, however, one cure, — a case operated upon by Dr. Fifield twelve or fourteen years ago. It was undoubted cancer, with the usual clinical history and the typical structure of the disease when I examined it afterwards. That woman was living a year or two ago with no return.

In the discussion so far there has been no stress made whatever upon the few cures. The statistics of Dr. Hodges give perhaps 8 per cent. of cures in the larger number of old operations, and 9 or 10 per cent. in those where the axilla has been cleared, counting absence of recurrence after four or five years a cure. Now, there are no cures without operation. It seems to me that that fact should not be left out of consideration.

There is one other advantage in operation ordinarily, and that is that there are a few months of almost complete respite, in which the patient has comparatively good health, good courage, and enjoyment of life. This does not come without operation. After that has passed, the history of the patients operated on is perhaps no better than the others, as a general rule.

I quite agree with Dr. Hodges in protesting against the theory of indiscriminate clearing out of the axilla. The operation is so long, the shock so great, and the increased mortality so great, that I think that each case should be considered individually before such operation.

It seems to me that the operation of cancer may generally be considered in the light of a palliative; in many cases it has appeared to me very decidedly such. The mechanical inconvenience of a large cancerous breast is a very great one, the pain and odor may be distressing. Patients who have been refused operation, in my experience, come back repeatedly at intervals of three or four weeks, begging that the breast shall be removed or something done, until finally the request is acceded to, and the operation done at a less favorable time than at first. The offensive sloughing of the ulceration of return cancer is not often quite as great as that of the cancerous breast not operated on. The œdematous arm may appear in either case. I have usually removed cancerous breasts, particularly when requested by patients to do so. I have not often advised against it, excepting in those broadly extended cases of cancer of the skin as well as of the breast, where the result of the operation would leave a very large ulceration which would never heal.

DR. A. CABOT: It seems to me that the time has not yet come to form a really just opinion upon this question. I think there is a great deal of unreliability in the statistics which are brought forward, mainly depending upon the uncertainty of the diagnosis. In the first place, taking the cases which are not operated upon, and which still are known to be living years afterward, I don't understand how, unless a microscopic examination was made, a diagnosis of cancer could be scientifically accepted. I remember about ten years ago assisting my father to remove the breast of a woman, who had what was thought by several surgeons to be undoubted scirrhus. The breast was removed, but the axilla not cleared out. I made a very careful examination of the breast from one end to the other. It was not scirrhus, but a chronic inflammatory condition of the breast, and that woman died under my care about two years ago of Bright's disease.

Another case occurred while I was a student in the hospital, in which the patient was operated upon and suffered five attacks of erysipelas following the operation one after the other. The patient finally recovered from all these, and died of heart disease some eight or nine years later. No examination so far as I know was made, and I don't think that case could be accepted. There is one case, however, of which I have knowledge and have examined, in which five operations were done for recurrences, the last operation about eleven or twelve years ago. That patient is still living. That seems to be one of the most conclusive cases of the advantage of the operation if we are to accept recurrence as proof of the cancerous condition of the breast.

DR. BRADFORD: Dr. Bolles has alluded to a case of mine which died. The patient was eighty years old, and came to the hospital because her relatives were unable to keep her at home. She could remain in the hospital only if she were operated upon. Though in apparently good health, and there appeared to be prospects of recovery, she died in four days. The operation, as was proved, was unjustifiable surgically.

It seems to me that the Society would assume a very grave responsibility if our dictum should go forth that cancer of the breast should not be operated on. As Virchow said, there is nothing so misleading as general impressions; and this evening necessarily the statements have been largely general impressions. All statistics of cancer of the breast dating back a few years must necessarily be faulty. Surgery has advanced; and we know that in a large number of cases, although no enlargements in the axilla are found, cancer exists in the glands there; therefore, statistics of cancer of the breast operated on without clearing out the axilla may be rejected as worthless, wherever they come from. Furthermore, if it is said that local treatment of cancer of the breast for five hundred years has done no good, and that we must look for internal medication, what has been the result of internal medication, which must have antedated local treatment many hundreds of years?

There is one thing which has not been alluded to, and that is the mental effect on the patient. I watched two cases that underwent operation several years ago. In both cases microscopic examination proved it to be scirrhus of the breast. One case was five years ago, the other three. In the second case there was a recurrence. Both patients are not only well, but in a contented state of mind. In the first case there has been no evidence of recurrence. Now, to tell such a patient that "nothing had better be done; you have got two years of life; you had better make your will and be as contented

as you can, and be philosophical," may be surgery; it is hardly humanity. To state that the operation is a grave one is to state that it is grave where the tumor is large and the greatest precautions are not taken. Given a small tumor, with antiseptics and careful directions one should get a first intention in a large proportion of cases. We should get a confinement in bed of not more than a week or ten days; and it is worth the patients' while to go through that for the sake of peace of mind for five months. Without doubt there are many cases in which an operation is not justifiable.

DR. M. H. RICHARDSON said: I have been very much interested in listening to the arguments presented by the reader, and to the subsequent discussion. It seems to me also that the time has not come when we can say that cancer of the breast must be left to take its inevitably fatal course, and that we must do nothing to check its progress. I think that a proportion of cures of one in six demands operative interference in an otherwise fatal disease.

It does not seem to me, as I remember the numerous cases of untouched cancer of the breast which I have had the care of, that there is any less suffering where no operation has been done than in those unfortunate cases of recurrence after operation. On the contrary, I have observed that after the completed operations which I have done, the return has very frequently been internal and invisible, and the patients have died without suffering and unaware of the nature of their trouble. Often there has been no greater complaint than of indefinite rheumatic pains.

It seems to me that a cancer of the breast with invasion of the axillary lymphatics presents clinically to the operating surgeon the strongest evidence of local origin. In dissecting the axilla you find those glands nearest the breast large and hard, while those remote gradually become smaller and smaller till you come to the normal lymph gland.

In the most favorable cases the lymph glands are not affected at all. The same is true of the process of invasion of the internal organs. I believe fully that these cases will be cured if the disease down to the last cell is removed, and not till then. Any other view of the nature of this disease makes the removal of cancer of the breast or of any other organ unjustifiable except as a palliative measure.

Although I have stated elsewhere that in all my cases of cancer of the breast, where I have dissected the axilla, certainly during the past three years, I have found the axillary lymph glands affected, as shown by the microscope; yet many cases are reported, by men whose authority cannot be questioned, that in a certain number there is no such invasion. Though the number where nothing has been found is extremely small (3%), the number where nothing could be felt before opening the axilla is quite large (20%).

I think there is a good deal of value in the statistics of this disease, but it must be remembered, whether they favor operative interference or not, that they are based, many of them, on operations done a long time ago, not as thoroughly as now, and when the cases were not selected as they are now. It is obvious that all operations done before the fact was known that practically all cases are complicated by axillary metastasis, cannot be used as a basis for ascertaining the number of cures. The indiscriminate use of the knife has undoubtedly raised the death-rate, and diminished the percentage of cures. I have seen many cases operated on where I think no operation should have been done, and I have done many myself which, as I am now convinced, ought to have been left alone.

I have no doubt that the mortality will be much diminished in the future, even in the completed operations. The mortality at the Massachusetts General Hospital is the same practically, during the past ten years, as during the previous history of the hospital, about 8%, and the operations mostly completed ones. Lister's operations from 1871 to 1880 were about the same (four deaths in fifty-three cases), with or without dissection of the axilla, (Butlin, "Op. Surg. Malignant Disease," p. 370). The colleagues of Butlin at St. Bartholomew's during the last decade have had but twelve deaths out of two hundred and seventy-eight operations, with and without dissection of the axilla. In forty-seven cases operated on by myself at the Massachusetts General Hospital, where the axilla was dissected, there were but three deaths, though the method used was undoubtedly very severe. One of these was due to miscarriage.

In regard to the indiscriminate dissection of the axilla, I would like to add that in my opinion the operation should never be done as a means of cure without the most thorough dissection of that space except in so small a proportion of cases as at most 3%. Without such dissection you may as well let the patient die as comfortably as she can, without interference, as far as any hope of permanent cure goes. There is no use in subjecting the patient to the danger and suffering of an operation, in addition to her other misfortunes, if you are going to leave a nest of cells in the axilla to grow, and finally infect the internal organs.

In regard to the time necessary for the completed operation, I think that in the hands of the surgeon, who alone ought to perform so difficult and formidable a dissection, the time ought not to exceed an hour in any case and rarely half that. The amount of shock must necessarily be considerable, but it ought to be no greater than the case demands when the operation is thoroughly done by men of skill and experience.

I agree with the other speakers who say that the time has not yet come when we can say that there is no use in this operation.

DR. J. W. ELLIOT: I know one case that was operated on in 1878, and that patient is now perfectly well. That is the only case I have ever followed a number of years.

DR. S. J. MIXTER: It seems to me that general statistics are more than usually valueless in deciding for or against this operation. In a very large proportion of cases the microscopic examination is wanting, and it is generally impossible to judge of the thoroughness of the operation. It is often claimed that a completed operation has been performed where the breast has been removed and some glands and surrounding tissue removed from the axilla. By injecting the breast with suitable substances the chain of lymphatic vessels may be shown running over the border of the pectoral muscle and through the axillary fat. These vessels are numerous, and

are spread out over a considerable surface, and in order to do any adequate operation the mass of tissues through which they run must be wholly removed. The entire contents of the axilla must also be dissected out, leaving nothing but the large vessels and nerves, the dissection being carried to the first rib. Few surgeons have operated in this manner, and only during the past few years. It is not from statistics from a large number of operations selected at random that we must draw conclusions, but from individual statistics; in other words, the best results by the best operators, whose statistics, including microscopical examinations, are reliable. A dozen such cases are of more value than all the results gathered from past hospital records.

DR. F. B. HARRINGTON: We recognize that certain epithelial diseases of the skin are local for a time. We recognize that cancer of the lip is local for a time, and if we get at it early enough, we can get it out successfully. Certainly many cases of cancer of the lip are cured. Reasoning from these facts and from the cases of prolonged freedom from the disease after removal, it seems to me that we are certainly justified in removing these tumors of the breast if we can do so early. In regard to the axilla I think that if the glands are very much enlarged they should not be removed. For with large axillary glands in plain sight there will undoubtedly exist other cancerous glands which are out of reach behind the axillary vessels. If the glands are not much enlarged, or apparently not at all enlarged, I think they should be removed.

DR. FITZ: I have very little to say and perhaps all that I have to say has come out in the course of the discussion. Certainly from the anatomical side the evidence is very strongly in favor of cancer starting as a local process somewhere, whatever the organ of the body may be; and the evidence is also very strong that it starts rather in certain individuals than in others. There thus appears to be a general basis for the origin of the tumor as well as local cause of origin.

It seems to me, however discouraging is the outlook from the standpoint of the past, the only hope lies in the attempt at getting rid of the tumor at the earliest possible moment after it makes its appearance. Probably all surgeons will recognize that cancer of the lip, if removed before there is any evident invasion of the glands, is very unlikely to return; so it seems to me with regard to cancer of the breast. The time to operate is early, before the glands of the axilla are tangibly involved. The class of operations which offer the possibility, and perhaps probability of success are those where there is no external evidence that the axilla is involved; at the same time the axilla has to be cleared out, because the glands may be diseased although they are not larger than a split pea at the time of the examination. As Dr. Mixter has stated, it is not from general statistics that we are to receive the most light on this subject, but from the individual experience of the most successful operator, provided his experience is so presented that there can be no question as to the truth of his statements.

DR. WILLIAM F. WHITNEY spoke of the difficulty of classifying malignant growths, and called attention to the fact that a tumor in the greater part of its history might be benign and then take on a malignant character. The diagnosis, therefore, is not always and absolutely sure from examining a small portion. The greater portion of the tumor should be carefully looked through. Usually these growths can be pretty readily shown to be of one character or the other, but occasionally cases occur which may perhaps in time, if we can follow them up and watch them, throw some light on the subject of their natural history.

DR. CABOT: In connection with the question of the local origin of cancer of the breast, I should like to mention a case of Dr. C. B. Porter's, in which I made a thorough microscopical examination.

The nipple was entirely gone, and its site was occupied by a flat epitheliomatous ulcer (Paget's disease). Stretching down from this into the breast were cylinders of epithelial cells surrounded here and there by little collections of cancer alveoli. These ran to a lump in the breast, which was a typical cancerous nodule surrounded by its zone of small round cells.

In this case the breast was wholly removed, but the axilla was not cleared out. It is now about eight years since this operation and the patient is still living, with no return of the disease.

DR. J. O. WHITNEY: Mrs. C. had a cancer of the breast over fifty years ago. The late Dr. L. L. Miller advised against operation. From time to time, when the breast became painful, he told her to take milk diet, and that relieved the pain. No operation was ever performed. Her daughter died of cancer of the breast. That is suggestive of the general origin of cancer.

In 1857 I amputated the breast of Mrs. S. I lost sight of her. She had a daughter who died of cancer of the liver. A son died of cancer of the ileo-cæcal valve. A father died of cancer of the lip.

I hardly wish to go on record as saying that in all cases no operation should be the rule, nevertheless I will say this, that, all in all, I think that more harm than good is done by excision of the breast for cancer or in destroying them by escharotics.

DR. F. G. MORRILL and DR. E. H. BRADFORD reported a case of

TUBERCULAR PERITONITIS, APPARENTLY CURED BY LAPAROTOMY.

DR. F. G. MORRILL: James W. K., æt. six, entered the Children's Hospital May 1, 1888. Small for his age and somewhat emaciated. One month ago enlargement of and pain in the abdomen was first noticed. Slight cough. Father a consumptive. Physical examination: deficient respiration and a few râles at bases of both lungs. Abdominal circumference twenty-five inches at line of umbilicus. Superficial abdominal veins enlarged. In the hepatic and epigastric regions a tumor with a well-defined lower edge, which could not be separated from the liver by percussion or palpation. Fluctuation in lower abdomen.

May 3rd. Tapped and obtained 20 ozs. of greenish-yellow serum. Tumor again carefully examined and apparently due to enlargement of the liver. Thinking that the trouble might be of specific origin iodide of potassium and mercurial inunctions were tried, but without benefit. The abdomen (which

measured twenty-two inches after the tapping) soon began to refill, and the temperature, hitherto but slightly above normal, rose to 101.5°–102° F. The chances now seemed sufficiently in favor of a tubercular peritonitis to warrant surgical interference, and the boy was transferred to Dr. Bradford's ward for an operation in case he should think a laparotomy advisable.

Dr. Bradford: A laparotomy was done and a small incision made just below the umbilicus. To my surprise no fluid was evacuated. The hand was inserted and the abdomen explored, and the mass, which seemed to be enlarged liver, on palpation proved to be nodular and connected with the omentum. One nodule was about the size of a walnut. The portion of peritoneum removed appeared to be studded with tubercles. The wound was dressed aseptically, a drainage-tube inserted, and the abdomen sewed up. No trouble followed the operation in temperature or otherwise, and the patient appeared to be improving. There was a slight discharge of fluid from the drainage-tube. The boy continued to improve, was sent to the Convalescent Home, and was discharged from the Convalescent Home in September. I saw him three weeks ago. He was better than at his entrance. The abdomen was larger than normal, and on palpation I could feel a large nodule externally over the region of the stomach. The improvement, it appeared to me, was probably due to the Convalescent Home and the country air. It appeared, however, that the drainage afforded by the laparotomy, and relief of tension, was of value, as an improvement followed the laparotomy before he went to the Convalescent Home. The laparotomy was attended by no disastrous results, as he improved directly after it. Why no fluid was evacuated on laparotomy can only be explained by the fact that the cavity was to a certain extent encysted, and the intestines served as a dam. The incision was left, and such fluid as would gather there drained. The intestines were found glued together, and so formed, to a degree, a cover.

EXCISION OF GANGRENOUS BOWEL; SUTURE AND RETURN TO ABDOMINAL CAVITY; RECOVERY.

Dr. M. H. Richardson showed a specimen of gangrenous bowel removed from a strangulated umbilical hernia of five days' standing. "The specimen was about eight inches in length, and was so much decomposed at the time of operation that excision was performed, with subsequent suture of the divided ends. The sac of the hernia was filled with fæcal fluid, and the strangulated coil with the same mixed with blood. It was impossible to make out just what portion of the small intestine had been caught in the ring, but it seemed best, on the whole, to do the primary operation of excision and suture rather than the formation of an artificial anus and subsequent resection and suture.

The patient, a woman of 43, made a good recovery, and is now practically well, the temperature never going above 102°. She had, immediately after the operation, rapid respiration, which was undoubtedly due to bronchitis, as there was nothing whatever connected with the abdominal condition to cause alarm from the outset.

The experience thus far in these cases is too limited to justify a very strong position in favor either of the primary or the secondary operation. My first case resulted fatally in twelve hours, yet I have no doubt whatever that the formation of an artificial anus or any other operation whatever would have resulted in the same way, owing to the extreme state of exhaustion to which the patient had been brought by long-continued strangulation and obstruction. It is a question as yet undecided, whether the combined dangers of artificial anus and subsequent resection are not greater than that of primary excision and suture, which further experience alone can answer.

Note.—November 18th, this patient is now sitting up, with normal temperature, regular bowels, good appetite, and perfectly well except a small granulating surface at the lower angle of the wound.

AMERICAN ACADEMY OF MEDICINE.[1]

THE FAMOUS HISTORIC MASTERS OF THE HEALING ART WERE MEN OF CLASSICAL EDUCATION,

by George Jackson Fisher, A.M., M.D., of Sing Sing, N. Y.

The author showed that Hippocrates had bestowed upon the world a symmetrical and systematic body of medical and surgical science, founded on the tradition and records of his predecessors; that the ancient Greek Asclepions were hospitals and clinical schools, presided over by priest-physicians of whom Hippocrates was one of the most distinguished. Reference was made to the extent and influence of the Alexandrian school of philosophy in the days of Aristotle, Herophilus, and Erasistratus. From this the author came to speak of the first century of the Christian era, and gave an account of Celsus the Roman, Pliny, Dioscorides, and spoke of the advanced condition of the healing art in that early age. The second century gave birth to Claudius Galen, of Asia Minor, who flourished chiefly in Rome. It was shown that Galen, as well as all the previous historic masters of the healing art, to which allusion has been made, was a man of genius and profound learning. Having shown that Galenic medicine was broader and deeper in its scope and influence than that of antecedent ages, the essayist proceeded to tell the interesting story of the manner in which medical science was preserved from extinction during the dark ages. He traced the modes by which it was conveyed into Persia, translated into Syriac and Arabic, annotated, tinctured with Oriental ideas, and returned to Europe in the "studies of the Saracens." The invention of printing, and its potency in distributing the existing science of that day, was next considered. Then followed the period of the new birth, the revival of letters, the discoveries in anatomy, physiology, and surgery. Vesalius and his great work, the labors of Fabricus and Harvey and of their contemporaries were briefly mentioned. All these teachers were also shown to have been men of classical education. Dr. Jenner, and the inestimable blessings which he conferred upon mankind, were next considered. The invention of the stethoscope by Lænnec in 1815, the contributions of Sir James Y. Simpson to obstetrics and gynæcology, and the still more brilliant services of Dr. J. Marion Sims, were strongly and justly held

[1] Concluded from page 507.

up for our admiration. Dr. Ephraim McDowell, the "father of ovariotomy," his followers, and their triumphs were duly remembered. All of these great leaders in medicine and surgery were shown to be men of classical education.

The speaker next referred to the extent of medical literature, to the necessity of being trained to study and research as a preliminary to entrance into the sacred temple of Æsculapius. He emphasized the fact that all the enduring literature of medicine, and all the substantial improvements, discoveries, and progress through all time have emanated from learned and talented men; that scarcely anything is owed to the illiterate of our profession. The paper concluded by urging the necessity of keeping a vigilant guard at the doors of the temple of Æsculapius, and if possible to prevent any from entering who are not "duly and truly prepared," not possessed of kindness of heart, of good common sense, of fair ambition, and of sobriety, honesty, and industry.

The last paper of the session was entitled

THE RELATIONS BETWEEN THE GENERAL PRACTITIONER AND THE CONSULTANT OR SPECIALIST,

by L. DUNCAN BULKLEY, M.D., New York.

In a previous paper the author had shown that specialism was a necessary and healthy outgrowth of general medicine. The object of the present communication was to point out the mutual relations which should exist between the general practitioner and the consultant or specialist.

Adjourned.

The annual banquet was held Tuesday evening.

WEDNESDAY MORNING SESSION.

THE NECESSITY FOR POST-GRADUATION INSTRUCTION IN THE PRESENT STATE OF AMERICAN MEDICAL EDUCATION,

by CHARLES CARROLL LEE, M.D., of New York.

The first post-graduate medical school was opened in New York in 1882. There are now six in operation in different medical centres. These courses are attended by practitioners anxious to brush up on certain subjects. Some of the colleges strive to provide clinical instruction for medical men, but the means at their disposal are not sufficient to provide the instruction required by practitioners. The post-graduate schools are continually increasing in popularity. Here the student in any particular branch is able to devote his entire time to that subject. He is also able to follow the practice of a number of experts, instead of being bound down to the methods of a single physician. For one mature enough to observe and judge for himself, the benefit of this is obvious. It is difficult to conceive how London, Berlin, or Vienna can offer greater facilities for clinical teaching than are to-day available in this city. To the medical teacher, a frequent European visit is desirable, not only to perfect his methods of instruction, but to liberalize his mind; but the time has arrived when, if the American teacher of medicine does his whole duty, the American student should lack no practical knowledge of his profession.

DR. HENRY J. BOWDITCH, of Boston, presented a paper entitled

TOLERANCE AND INTOLERANCE IN MEDICINE; CODES OF ETHICS.

What code of ethics should the Academy adopt? The author took the ground that tolerance and intolerance are, in the world at large, two great moral forces, and in the line of resultant of these two powers the world has been and will be forever carried forward. History shows how these forces at times have actually changed places and made vice appear to be virtue. Hence they must be used cautiously and understandingly. Turning to medicine he found that intolerance had almost invariably been ready to oppose any new idea. Ambrose Paré, Jenner, etherization, and Morton, thoracentesis by Wyman's method, were brought forward as examples of the truth of the above statement. Tolerance has, however, always come to the rescue.

The author next referred to the American Medical Association, and of his great interest in it in its early days, and spoke of the gradually increasing tyranny of its "code." He called attention to the action of the American Medical Association last year, preparatory to voting, that no signature to codes should be required hereafter. The expulsion of the New York State Society was spoken of. In this connection he referred to homœopathy and eclecticism, and expressed freely his disgust at the tyranny exhibited at the time of the expulsion of the homœopathists from the Massachusetts Medical Society. He gave his testimony from personal knowledge of some members of these two sects to the integrity and intelligence of some homœopathists. He advanced the opinion that the Academy will not recover its just position until it rescinds the vote of adopting the American code of ethics. He claimed that the only true code, viz., "that of the gentleman," is the Golden Rule of "doing unto others as you would have them do to you." He concluded with the following words: "Gentlemen of the Academy,— If all of us would make that Divine rule the guide of our professional relations, tolerance and intolerance would join hands in peace, and this Academy, if it could induce all physicians to act upon it, would have accomplished one of its highest missions. God grant that this body may, with each year of its growth, by the work of its individual members, and by its own joint labors, tend to bring the whole profession of America up to higher grades of thought, of sentiment, and of action, so that we may at length really become what we have hitherto, but with unconscious falsehood claimed to be, a truly liberal profession.

WHICH IS THE LIBERAL SCHOOL?

by DR. CHARLES MCINTIRE, Easton, Pa.

The author had been led to write the paper by a letter received from a homœopathist who was in other respects qualified for admission to the membership of the Academy. The question was, Does that branch of the legally qualified practitioners of medicine, self-called regulars, show illiberality in their professed rule of non-intercourse with any branch professing to hold any exclusive dogma; or is the illiberality shown by those who profess to believe in any exclusive dogma, while they have

given up its practice? The author concluded that the illiberality was shown by the latter class.

The consideration of the following amendment to the constitution was taken up: "The fellows of the Academy will be governed by those principles which actuate educated and honorable men in every profession, and by the constitution and by-laws of the Academy." After a prolonged discussion, the amendment was laid on the table for one year.

The following resolution was presented by the Council, and adopted: "That the Academy heartily endorses the suggestion of Dr. Parvin in his address that practical obstetrics should be made a part of the regular course in every medical college."

THE MULTIPLICATION OF USELESS DRUGS,

by Charles C. Bombaugh, A. M., M. D., Baltimore.

In dealing with this subject, the author referred to the continually increasing unwieldiness of the U. S. Dispensatory. The index of the fifteenth edition extends through seventy-six three-columned pages, embracing about seventeen thousand names of medicinal substances. Deducting one-third — a liberal allowance — for repetitions, there are, in round numbers, eleven thousand. Of this number, he thought that ten thousand could be transferred to the *index expurgatorius*, without being seriously missed. Of the three hundred and twenty-four constituting the primary list, it has been shown that one hundred and eight,— one-third — are very active, one hundred frequently do their work, and one hundred and sixteen are untrustworthy. In this connection, reference was made to the very limited number of remedies deemed worthy of classification in Dr. Wood's therapeutics. In the sixteenth edition of the Dispensatory there is an addition of fifteen pages to the index, a total of ninety-one pages. The editors intimate that they have discarded some of the material they consi'e.ed "effete," so that although they added six hundred pages, the net increase was only one hundred and sixty-seven pages. As it is time to commence the discarding process and throw overboard the rubbish, this preliminary aggressive movement on the effete is most welcome. There is an irruption of newly discovered medicine and newly devised combinations which demands arrest. The only ground for tolerance is that now and then one comes to stay with the stamp of authoritative approval.

The speaker adverted at length to the declining sovereignty of empirical conclusions, and the coming reign of pharmacology, which is concerned with the action of drugs on the healthy body. The time has come for future dependence upon experiments with medicinal agents upon animals. Among the reasons for hastening the coming revolution is increasing recourse to remedial measures other than the administration of drugs. More and more reliance is placed by the practitioner upon such agencies as the electric current, massage, dietetics, treatment of systemic conditions or diatheses, germicides, antiseptics, disinfectants, the sanitation of State medicine, the prophylaxis of preventive medicine; but while we are grateful for these acquisitions, and while we welcome additional contributions to a list of positive medicines, which is conspicuous for insufficiency, let that gratitude and that welcome be a standing protest against mere numerical preponderance.

THE INFLUENCE OF THE WORK OF THE ILLINOIS MEDICAL PRACTICE ACT UPON MEDICAL EDUCATION,

by H. A. Johnson, M. D., Chicago.

The Illinois State board of health was created in 1877. There are now one hundred and fourteen colleges which require evidence of preliminary study as a condition of admission. In 1883 there were only forty-three. Forty-three colleges now exact a three years' course, as compared with twenty-two in 1883. The board has now adopted the following resolution, defining the phrase "medical colleges in good standing" to mean "only those colleges which shall, after the sessions of 1890–91, require four years of professional study, including any time spent with a preceptor, and three regular courses of lectures, as conditions of graduation, and shall otherwise conform to the schedule of minimum requirements heretofore adopted by the Board."

One of the principal causes of efficiency of the Illinois board was the fact that it was a "mixed" board.

The total number of new members elected was ninety-eight.

The following honorary members were elected: Dr. J. H. Rauch, Springfield, Ill.; Sir Joseph Lister, London; Sir Spencer Wells, London; J. Lucas Champonnière, Paris; Dr. H. D. Didama, Syracuse.

Officers for ensuing year: president, Dr. Leartus Connor, Detroit; vice-presidents, Drs. Peter D. Keyser, Philadelphia; L. Duncan Bulkley, New York; Theophilus Parvin, Philadelphia; George J. Fisher, Sing Sing, N. Y.; secretary and treasurer, Dr. Richard J. Dunglison, Philadelphia; assistant secretary, Dr. Charles McIntire, jr., Easton, Pa.

Place of next meeting, Chicago, Ill.

Recent Literature.

Anatomical Technology as applied to the Domestic Cat. With illustrations. By Burt G. Wilder, B. S., M. D., and Simon H. Gage, B. S. Second edition, revised. New York and Chicago: A. S. Barnes & Co.

This work has so much in it to commend that we are not surprised that a new edition should be called for. It contains some additions and modifications, but the book is essentially the same. The methods will be found of great value to those beginning to work for themselves. The book as a whole is a very useful one.

The Medical News Visiting List for 1889. Lea Brothers & Co., Philadelphia.

The weekly form of this convenient and useful Visiting List has dated pages arranged for 30 patients a week; there are 48 prefatory pages of indispensable data, with five illustrations, and 176 pages of classified blanks. The text portion (48 pages) includes the latest therapeutic novelties, their doses and effects.

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THE PROPER TREATMENT OF CRIME AND CRIMINALS. OUGHT THE CRIMINAL TO BE DEALT WITH AS A LUNATIC?

BINSWANGER, professor of psychiatry, of Jena, proposes to treat crime as insanity, and criminals as lunatics till they shall have given sufficient proofs of their reformation.

While denying (in contradiction to Lombroso and his school) that there is any "external organic conformation" peculiar to criminals, or that there is any necessary relation between the development of the brain and of the cranium and crime, Binswanger affirms nevertheless that the true criminal if not *insane* is *mal-sane*, and that he is ordinarily the expression, if not of a reversion to prehistoric savage races, at least "of mental troubles amassed during generations, or of diseases of the nervous system in general, transmitted from parent to child," which have a deteriorating influence on the psychical and moral development, "diminishing the aptitude for judgment and reflection," and fostering an impulsive and unrestrained egoism.[1]

These views are in accordance with the careful studies of R. L. Dugdale, member of the Executive Committee of the Prison Association of New York, in reference to that notorious family of criminals known as the "Jukes family." Dugdale finds a very close relationship between nervous disorders and crime. He includes under the head of nervous disorders all convicts "who are or have been afflicted with insanity, epilepsy, idiocy, chorea, paralysis, or other nervous disorders, or who have any blood relations who are or have been subject to any of these diseases." Of the two hundred and thirty-three prisoners examined, forty-nine, or 23.03 per cent., belong to this stock, or nearly one in every four. If we compare the crimes against property with those of impulse, placing arson in that category, we shall find that of the former there are 16.75 per cent. of neurotic stock, while of the latter there are 40.47 per cent." These statistics are quite in accord with the estimate of Dr. William A. Guy of London,[3] who finds "that the rates of insane to sane criminals is thirty-four times as great as the rates of lunatics to the whole population of England; or, if we take half the population to represent the adults which supply the convict prisons we shall have the criminal lunatics in excess in the high proportion of seventeen to one."

Another startling fact which we ascertain from Dugdale's tables is that 42.49 per cent. of the total number of criminals who were the subjects of his investigations were of intemperate families, while 39.05 per cent. were habitual drunkards. With the house of refuge boys, the ratios rise respectively to 51 per cent. of intemperate family, and 51 per cent. of habitual drunkards.

It is of course to be borne in mind that in the creation of criminals there are two important factors: heredity and environment; that a person with strong inherited proclivities toward crime may, under the repressing influences of a good educational environment lead an honest life, while on the other hand, bad surroundings and lack of training and discipline may develop a naturally vicious child into a hardened and incorrigible criminal, or even develop criminality in one whose heredity might be regarded as fairly good.

This politico-economic method has won the advocacy of Charles Dudley Warner, who writes on the subject in the last *Forum*,[2] an article under the head "Creating Criminals." Our system of dealing with criminals and those with strong criminal tendencies, he says, is calculated to recruit the ranks of the professionals. It is an old story, the life of young offenders, boys or girls, through the city lock-ups, the usually foul county jails, the houses of thirty days' detention, the reform schools, the penitentiaries, always with associations tending to destroy self-respect and increase a liking for vileness, to the full-blown professional condition. Our main effort is to punish crime, not to prevent it.

Mr. Warner regards it as amazing that while in medicine there has been great progress in the past fifty years in the line of the prevention of disease, in the science of *penology*, that is, the rational mode of dealing with crime and criminals, either for prevention or reform, there has been but very little advance made.

He makes some good suggestions as to the edu-

[1] Congress of German Physicians and Naturalists, Cologne, Sept. 18-22, 1888.

[2] The Forum, November, 1888.

[3] Journal of Statistical Society, vol. xxxii. p. 16.

cation needed for criminals in prison, if we would reform them and make them fit again to go into society. We must recognize the fact that the ordinary criminal "is a defective human being, or quite disorganized (*sic*), always defective morally, generally twisted mentally (?), and in the majority of cases damaged and defective physically. He cannot be changed into a moral being, with impulses to right and orderly living, except by discipline applied long enough to change his moral, mental, and physical habits." "Considered broadly," continues Mr. Warner, "the prevention of the increase of crime and of criminals lies in two things. (1) The rescue of children predisposed by their circumstances to crime. Here is a vast field of usefulness open to social reformers, who would nip crime in the bud. (2) The subjection of actual criminals to the discipline calculated to change their habits until they are by competent authority pronounced fit to go out."

In other words, according to this view of the relation of crime and of criminals to the community, and the proper therapeutic measures, prophylactic and curative, to be applied to this disease in the body politic, the criminal is to be practically treated as an insane and irresponsible person until by a term of discipline, which shall include study, work, and right and orderly living, he shall have shown that he is so changed in his habits that he is fit to take his place in the world again.

In fine, although science may not as yet have recognized a definite "criminal type of brain," or any "organic conformation" peculiar to criminals, any more than to lunatics, it is, nevertheless, the part of wisdom for society to regard criminality as disease and treat it as such; the inveterate and incorrigible victim of this malady to be kept under restraint, where he can neither be a source of disturbance nor infection, and a suitable uplift being given to those that show evidence of radical reformation and true moral sanity.

PUERPERAL FEVER A PREVENTABLE DISEASE.

A PLEA FOR THE MORE GENERAL ADOPTION OF ANTISEPTICS IN MIDWIFERY PRACTICE.

UNDER this title Dr. Charles J. Cullingworth, obstetric physician to St. Thomas's hospital, has delivered a noteworthy address to the students of the hospital school. It is to be hoped that this plea will reach a far wider audience than that to which it was addressed, and strong in this hope we cannot forbear using our efforts in giving greater publicity to its burden.

Were it not that so many physicians are apparently oblivious to the enormous mortality and morbidity from puerperal fever, it would seem unnecessary to reiterate the facts so well known to those who have studied the subject, and which are so clearly stated by Dr. Cullingworth and by previous writers. The returns of the Registrar-General's office for the year 1886 show that in England and Wales there were two thousand and seventy-eight deaths from puerperal fever, a mortality of 4.29 *per mille*. Owing to inaccuracies of observation and record it is believed that the figures of the Registrar-General's report fall far below the truth; but accepting them without correction, it appears that "no fewer than six thousand nine hundred and sixty-six deaths from puerperal fever have been certified as such within the three years 1884-86, an average of two thousand three hundred and twenty-two cases per annum in England and Wales." There are no data to show the percentum of puerperal morbidity; but there is reason to believe that if all cases of morbidity could be collected and accurately classified, the relative proportion of puerperal disease directly attributable to infection would be appalling.

The administrators of most lying-in charities are now alive to the duties of prophylaxis, and the statistics of these institutions show the results of intelligent and well-directed effort. In the Lying-in Hospital in Vienna the mortality from puerperal fever in 1881-85 was 4 *per mille*. In Leopold's clinic in Dresden, among one thousand three hundred and eighty-eight deliveries in 1887 there was only one death from puerperal fever, 0.7 *per mille*. In the New York Maternity in 1886, with four hundred and sixty-three deliveries, there was one death from sepsis, 2.1 *per mille*.

Perhaps the possibilities of strict antisepsis are as well shown by the following table, quoted by Dr. Cullingworth from a paper by Dr. W. L. Richardson,[1] as by any statement at our command: —

BOSTON LYING-IN HOSPITAL.[2]

Date.	Deliveries.	Total number of Deaths.	Deaths from Sepsis.	Mortality per 1000 from Sepsis.
1882	288	17	16	55.5
1883	242	14	11	45.8
1884	310	6	5	16.1
1885	308	4	2	6.4
1886	373	3	0	0

But it is to the private practitioner, "who has never lost many cases from puerperal fever," that the appeal for rigid asepsis needs most urgently to be addressed. To him must be pressed home the

[1] Boston Med. and Surg. Journal, January 27, 1887.
[2] The present system of antisepsis in use at this hospital was adopted in the fall of 1885.

doctrine that childbed fever is *not* due to "nosocomial malaria," nor to any form of autogenesis; but that puerperal infection is heterogenetic, is engendered only by the introduction of poisons from without, and can be prevented by approved measures of asepsis conscientiously carried out. In the words of Parvin, "the doctrine of autogenesis is a confession of ignorance, the creed of fatalism, the cry of despair, the very pessimism of obstetric medicine."

In Germany the use of antiseptics in private obstetric practice is a matter of State regulation, the breach of which is liable to punishment. In Great Britain and in this country the use of adequate prophylactic measures is, and is likely to remain, a matter of individual responsibility, not of penal enactment. Surely, as Cullingworth truly says, it ought not, on that account, to be considered the less binding.

PNEUMONIA MORTALITY IN MASSACHUSETTS ALMSHOUSES.

As a slight contribution to the further study of mortality from pneumonia, a consideration of some figures derived from the reports of the three State almshouses in Massachusetts may prove of interest. In the Monson Workhouse the death-rate for the decade 1856 to 1865 was 21.09 per cent., while for the decade 1866 to 1875 it had fallen to 16.43 per cent. Since 1872, when the institution was converted into a State primary school, the adult paupers being sent to the State almshouses at Bridgewater and Tewksbury, pneumonia has been so infrequent among the children as practically to be absent. At any rate no comparison is possible with the data of the previous decades.

Of the Bridgewater Workhouse we have data at our disposal since 1861. For the five years from 1861 to 1865 the death-rate from pneumonia in this almshouse was 27.44 per cent.; for the decade 1866 to 1875, 28.12 per cent., and for the decade 1876 to 1885, 36.58 per cent., showing a small though steady increase. From the Tewksbury State Almshouse the reports are more complete, showing for the decade 1856 to 1865 the very low rate of 13.95 per cent.; for 1866 to 1875, the large rate of 36.25 per cent., and for 1876 to 1885, the still larger rate of 40.60 per cent. Eliminating, however, as years of exceptional mortality, the year 1874, when of twenty-six patients fourteen died, the year 1875, when out of thirty twenty died, and the year 1885, when of eleven patients all died, we get a death-rate for the three decades of 13.95 per cent., 23.07 per cent., and 34.67 per cent.

Since the inmates of these institutions are, and always have been, paupers without any legal residence in the State, the fact that they are for the most part foreigners does not perhaps vitally enter into the problem whether the modern treatment of pneumonia is more or is less efficacious than was the treatment of former years. The trustworthiness of the statistics taken as a whole may, however, well be doubted, in view especially of the fact that in one of the institutions the number of deaths from pneumonia in one year appears to exceed the number of cases of the disease that had been under treatment, while in another year in which deaths from the disease are recorded there are no recorded cases of sickness from pneumonia, although we do find that there were cases of "congestion of the lungs," as well as of "other respiratory diseases."

This matter of diagnosis is of vital consideration. When Dr. Hartshorne read his paper last February before the College of Physicians of Philadelphia on the "Past and Present Mortality and Treatment of Pneumonia," Prof. Osler made the point in his discussion of it that the present diagnoses of pneumonia differ so radically from the diagnoses of the disease made even a few decades ago as to prevent a complete comparison. In addition to this, it seems the part of caution to consider whether there be not other discrepancies, if not positive errors, in the statistical computations which militate against the idea that any comparison between the mortality of the disease in separated decades can be so "fairly and safely" made as to allow a positive and sweeping arraignment of modern methods of treatment. The ages may differ no less widely in the different sets of statistics than do the nationalities of the patients, while the character of the disease, whether it be primary and uncomplicated or merely a sequela of some disease that has already reduced vitality, is likewise utterly ignored. In other words, the assumed inefficiency of modern treatment may be shown to be only one of many possible causes of the apparent increase of mortality, a view of the subject which we postpone for future consideration.

MEDICAL NOTES.

— Dr H. A. Hare of Philadelphia suggests in the *University Medical Magazine* a new use for ether during anæsthesia. Very frequently during the early stages of the administration of an anæsthetic the patient "forgets to breathe" even before the ability to perceive peripheral irritation is lost. Even later in anæsthesia, when the breathing suddenly ceases, it is customary to use cold water externally and to slap the patient with wet towels. Such measures are generally called for hurriedly,

and it is not at all uncommon for an exasperating delay to occur before the water arrives. The ether is always at hand, however, and Dr. Hare finds that in a large number of instances both in man and the lower animals the free use of ether poured upon the belly causes so great a shock by the cold produced by its evaporation as to cause a very deep inspiration, which is often followed by the normal respiratory movements.

— A story which sounds more like the plot of a stage extravaganza than actual fact is given by a foreign contemporary regarding one of the hospitals of the Red Cross in Hungary. In one of the large towns the committee of organization, though of two years' standing, had done absolutely nothing towards completing the arrangements for the hospital, when they unexpectedly received an intimation that the Archduke Charles Lewis would visit their institution within two days. Startled by the unwelcome intelligence, the committee promptly engaged a large building for one month, and set a hundred workmen at the task of getting the place into order. They borrowed the beds and other articles of furniture from the municipal hospital, and secured a number of ailing natives, who consented to play the *rôle* of sick persons for two florins a day. The Archduke declared himself thoroughly satisfied, as the result of his inspection, but he had no sooner turned his back than the committee brought in the workmen to restore the house to its original condition. Here, however, there was a hitch, the patients finding their occupation too lucrative to be relinquished at such a short notice, and declining to turn out until they were perfectly restored to health. In fact, force had to be resorted to in order to evacuate the premises. The result was that some of them brought actions against the committee, who were ordered to pay the two florins daily to all the sick men engaged for the Archduke's visit. The worst of it was that the hopes of the members of the committee, who expected a decoration, were thus frustrated.

— The overcrowded condition of the Flatbush, L. I., insane asylum is attracting continued attention in New York. The King's county asylum, including four auxiliary buildings, was constructed to accommodate 1041 persons. It has now over 1600 persons crowded and huddled together. The wards, it is said, are overcrowded, and the hallways are full. The building is in need of many necessary repairs, the plumbing especially being defective. There are one hundred and twenty women and thirty-six men penned up in the basement and cellar, the walls of which are wet with moisture and slime.

— The *Polyclinic* says that Dr. Durand, of New Orleans, wishing to test the practical effect of mind disease, gave a hundred patients a dose of sweetened water. Fifteen minutes after, entering apparently in great excitement, he announced that he had by mistake given a powerful emetic, and preparations must be made accordingly. Eighty out of the hundred patients became thoroughly ill, and exhibited the usual result of an emetic; twenty were unaffected. The curious part of it is that, with very few exceptions, the eighty "emeticized" subjects were men, while the strong-minded few, who were not to be caught with chaff, were women.

— Miss Florence Nightingale is said by the *Medical News* to be a confirmed invalid from a spinal disease incurred through over-devotion to the cause of nursing. She went home sick from the Crimea and her health was never thereafter thoroughly re-established. She is now approaching her seventieth year, and is destined to pass the evening of her days as an inmate, and its most favored inmate, of St. Thomas's Hospital, London. It was at that institution, in 1858, was established the Nightingale Fund of £50,000, in perpetual commemoration of the heroic labors of that lady in the Crimean hospital.

— The *Lancet* quotes the following thrilling bit of description from a recent English novel: Scene: A dissecting-room. Subject of demonstration: The brain of a man the victim of neuralgia. "The operator laid bare the brain. Every eye, bent, strained on it under the bad light, perceived it to have been, as it were, eaten away, consumed by a gnawing. . . The professor compressed his shaggy brows, and then, with one slide of the scalpel, laid open the hideous mass. On the instant arose a cry, a hiss, a panting of bitter loathing, of horrible nausea. As the brain fell apart there crawled across the table, black from its rich battening, an enormous spider!"

Miscellany.

AN UNUSUALLY RARE CASE OF PLURAL BIRTHS.

Dr. Breneman describes in the *Australasian Medical Gazette* for Aug., 1888, a case of quadruple births, as follows: —

"The patient I have frequently had under my care, suffering generally from cardiac asthma, consequent on an attack of rheumatic fever; she never enjoys good health. Her family history shows no tendency to plural births. She is thirty-one years of age, was born in Tasmania, first menstruated between seventeen and eighteen, was married at the age of eighteen, since which time she has given birth to seven full-time children, the youngest of which is two years and eight months old. Her previous labors have been rather unnatural; says she has had three cross-births, and had to have the children turned.

Her last menstruation was from December 20th to New Year's Day; quickened the middle of April; says she did not have a day's good health while carrying, no appetite, and was an immense size, in fact a burden to herself near the last, feet and legs very œdematous, and noticed very little movement with the exception of an occasional flutter.

She was first taken ill on the previous Friday and had occasional pain until Tuesday about eleven o'clock, when the membranes containing the first child ruptured and there was an immense gush of liquor amnii; her husband just happened to come into the house, and noticing the condition of affairs assisted her into bed, when she immediately had another pain and the first child was expelled. He ran for the midwife, who was there five minutes afterwards. She had scarcely time to tie the cord and remove the child when another pain ruptured the membranes containing the second child, and there was a second gush of liquor amnii; another pain expelled the second child, which was followed by the placenta, with the two cords attached. But a few minutes elapsed when another pain ruptured the membranes containing the third child, when there was another gush of liquor amnii, which was followed by the third child with its placenta.

The midwife thinking she had come to the end of the string made preparations for applying the binder, when the membranes containing the fourth child ruptured, when there was another gush of liquor amnii, and with a few pains the fourth child was expelled with its placenta. There was very little hæmorrhage. The labor was quite natural. The children were expelled head first, with the exception of the fourth, which was expelled feet first. The labor was very short, there being but thirty minutes from the time the first child was born to the completion of the labor; ten minutes between each child. The children were all born alive, and lived from two to six hours and a half.

I examined the children and found them to be as large as the usual five and a half months child, perfectly formed and exceedingly well nourished; three girls and a boy. The mother made an uninterrupted recovery, and was out of bed on the eleventh day."

INDUCTION OF PREMATURE LABOR.

M. BAYET, interne in Prof. Kufferath's clinic in Brussels, describes in *La Clinique* an attempt made under the professor's direction to induce premature labor by means of the so-called elytro-pterygoid apparatus of Chassagny. This apparatus, about which a good deal of discussion has recently taken place in Belgium, consists essentially, according to the *Lancet*, of a pig's bladder, which is folded up and introduced into the uterus, and subsequently distended by means of the injection of water, similarly to the "colpeurynter" which is used in German clinics. The patient in M. Bayet's case was a young woman of strong constitution, but with a rachitic pelvis, the conjugata vera being only six centimetres and a half, as measured by Van Huevel's pelvimeter. The woman was in the eighth month of pregnancy. M. Kufferath gave her the choice of having premature labor induced at once, or of waiting until her full time, and then submitting to Cæsarean section, with the hope of bringing forth a living child. She naturally selected the first of these alternatives. With this object Chassagny's apparatus was introduced, and allowed to remain for half an hour in the uterus; it caused, however, severe pain, and was extremely difficult to keep in its place, besides which it produced erosions in the vagina, causing a bloody discharge. Further attempts were subsequently made, but these proved so painful, and caused so much ulceration and œdema of the vagina that they had to be discontinued, and the patient left alone for five or six days. These attempts to produce premature labor having entirely failed, a soft bougie was introduced, and in three or four days' time with a successful result. An attempt was made to deliver the woman with forceps, but the head refused to engage the brim. Tarnier's basiotribe was therefore applied, and the head crushed in all directions, after which extraction was easily effected. The patient made a good recovery. M. Bayet remarks that Chassagny's apparatus gave a very different result from that described by M. Hubert, who reported that he had been able to induce premature labour in an hour by its means. M. Bayet also remarks that it is impossible thoroughly to disinfect an apparatus composed of a pig's bladder, especially as it is necessarily introduced folded up, and therefore full of creases. Regarding the effect of the basiotribe, it is noteworthy that the child when born was, legally speaking, alive, its respiratory and cardiac movements continuing, indeed, for about two hours, besides which it cried faintly. Of course, as the brain was completely reduced to a pap-like mass, life, such as it was, depended entirely on the medulla oblongata; still it is well to remember that in delivery by means of cephalotripsy it is possible that the child may be born "alive," and may therefore inherit property.

M. Bayet's objection to the pig's bladder on the ground of the septic qualities inseparable from it appears to be an insuperable one to its employment as an obstetric agent.

DR. HENRY B. SANDS.

THE sudden death of this eminent surgeon, which was recorded last week, was at first supposed to be due to cerebral hemorrhage, but the autopsy performed by Drs. Delafield and Peabody indicated that the cause was probably heart failure; the walls of the heart were very thin, and a clot was found in one of the coronary arteries.

From the beginning Dr. Sands' surgical career was a brilliant one, both as regards his hospital work and his private practice; but its success was due quite as much to his indefatigable industry as to native talent. Of late years he was especially identified with the Roosevelt Hospital, where he had a continuous service which he resigned last April; and with the New York Surgical Society, in which he took the deepest interest. Though frequently making valuable contributions to periodical medical literature, he never published any extended surgical work; it is stated, however, that he had one in contemplation, should his life be spared. As a consultant, he was held in the highest esteem by his professional brethren. As a general surgical authority none stood higher; while his many admirable qualities of mind and heart, combined with this great professional

reputation, gave him a position in the community which few ever attain.

The funeral services, which were held at the Broadway Tabernacle, November 21st, were attended by the Faculty and students of the College of Physicians and Surgeons, the Academy of Medicine, Medical Society of the County of New York, and other societies, and by a large number of prominent citizens out of the profession. A touching address was made by the Rev. Dr. Wm. M. Taylor, the pastor of the church, in the course of which he referred to a plan which Dr. Sands had conceived for building and equipping an operating amphitheatre in connection with Roosevelt Hospital. Dr. Taylor thought that the medical profession could erect no more fitting memorial to Dr. Sands than such a building, and suggested that a subscription be started among physicians for the purpose of carrying out this plan.

The pall-bearers were Drs. J. C. Dalton, Wm. H Draper, James W. McLean, Francis Delafield, Charles McBurney, A. B. Ball, and J. G. Curtis, and Messrs. James Roosevelt, John Knox, and R. G. Bradford.

Correspondence.

A LARGE BABY.

WESTERLY, R. I., Nov. 22, 1888.

MR. EDITOR,—The records of the large babies are so unsatisfactory, that I have no hesitation in calling attention to one in my practice here.

Mrs. F., age 28, viii-para, entered into labor February 8, 1888, with a midwife in charge. February 11, at 12 P. M., as the child was still unborn, I was called to "fix her," as the husband said. Examination revealed os fully dilated and membranes unruptured, dorsum presenting, with child in D.L.A. position. Etherized, and delivered a living female child, which weighed in a small napkin 15 lbs. 2 oz.; a second pair of scales was used, which gave a weight of 15 lbs. 3 oz.

Very respectfully,

EDWIN R. LEWIS, M. D.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 10, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	600	225	18.40	12.96	1.76	2.08	5.76
Philadelphia	1,016,758	—	—	—	—	—	—	—
Brooklyn	751,432	296	116	22.78	11.22	1.70	2.72	14.62
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	138	48	10.22	16.79	1.46	2.19	6.38
Boston	407,024	166	58	17.50	9.60	2.40	3.60	7.20
Cincinnati	325,000	—	—	—	—	—	—	—
New Orleans	248,000	119	43	17.85	11.90	6.80	.85	8.55
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	77	30	16.77	12.90	5.16	2.58	2.58
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	17	3	11.76	23.52	—	5.23	—
Charleston	60,145	37	18	11.10	—	2.70	2.70	—
Portland	40,000	14	3	—	28.56	—	—	—
Worcester	76,328	24	8	20.80	29.12	4.16	4.16	8.32
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	18	3	16.66	11.11	5.55	5.55	5.55
Fall River	61,203	23	8	30.45	17.40	—	—	21.75
Lynn	51,467	15	—	13.33	—	—	—	13.33
Lawrence	40,175	18	4	22.22	22.22	—	11.11	5.55
Springfield	39,953	—	—	—	—	—	—	—
New Bedford	36,298	11	3	9.09	—	—	—	9.09
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	8	2	—	12.50	—	—	—
Chelsea	27,552	11	1	9.09	9.09	—	9.09	—
Haverhill	24,979	5	1	—	—	—	—	—
Taunton	24,796	5	2	20.00	40.00	—	12.50	—
Brockton	24,784	5	0	20.00	20.00	—	—	20.00
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	5	0	20.00	—	—	20.00	—
Malden	18,932	—	—	—	—	—	—	—
Fitchburg	17,534	8	1	—	37.50	—	—	—
Waltham	16,651	3	0	—	33.33	—	—	—
Newburyport	13,839	3	0	—	—	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 1,626: under five years of age 567; principal infectious diseases (small-pox, measles, diphtheria, and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1285, consumption 211, acute lung diseases 215, diphtheria and croup 122, typhoid fever 41, diarrhœal diseases 37, scarlet fever 31, measles 16, whooping-cough 16, malarial fever 11, cerebro-spinal meningitis eight, erysipelas four. From scarlet fever, New York 25, Boston, Brooklyn, Baltimore, and New Orleans one each. From measles, New York 12, Brooklyn and Boston one each From whooping-cough, New York seven, Brooklyn five, Baltimore and Washington one each. From malarial fevers, New York six, Brooklyn two, New Orleans, Nashville, and Charlestown one each. From cerebro-spinal meningitis, New York three, Washington two, Worcester, Fall River, and Taunton one each. From erysipelas, New York two, Brooklyn and Washington one each.

The meteorological record for the week ending November 17, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Nov. 17, 1888.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.	Daily Mean	8 A. M.	8 P. M.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	Duration. Hours & Min.	Amount in Inches.
Nov. 11	29.76	44.0	52.0	40.0	75	46	60.0	S. W.	W.	12	17	C.	C.	1.00	.02
" 12	30.19	40.0	52.0	36.0	60	35	48.0	S. W.	N. W.	18	6	C.	C.		0
" 13	30.55	34.0	46.0	26.0	61	63	62.0	N.	S. W.	8	12	C.	C.		0
" 14	30.42	48.0	62.0	38.0	79	62	70.0	S. W.	S. W.	20	15	C.	C.		.0
" 15	29.85	52.0	54.5	38.0	81	93	87.0	S. W.	N.	8	13	O.	R.	12.00	.47
" 16	29.85	46.0	62.0	42.0	80	85	82.0	W.	N. W.	8	12	C.	R.	8.00	T.
" 17	30.34	35.0	46.0	34.0	81	45	63.0	W.	N. W.	12	16	C.	C.	7.00	.11
Means for the Week	30.14		53.0	36.0			66.0								

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM NOVEMBER 16, 1888, to NOVEMBER 23, 1888.

By direction of the Secretary of War, leave of absence for four months, is granted Lieutenant-colonel Richard H. Alexander, surgeon, to take effect from the date of his relief from duty as medical director Department Arizona by Lieutenant-colonel Joseph R. Smith, surgeon. Par. 11, S. O. 268, A. G. O., Washington, November 16, 1888.

SMITH, lieutenant-colonel, after being relieved by Lieutenant-colonel Alden, will report in person to the commanding officer Department of Arizona for duty as medical director of that Department relieving Lieutenant-colonel Richard H. Alexander. Par. 10, S. O. 268, A. G. O., Washington, November, 16, 1888.

ALDEN, CHARLES H., lieutenant-colonel, surgeon, is relieved from further duty at the United States Military Academy, West Point, New York, and will report in person to the commanding general Department of Dakota, for duty as medical director of that department, relieving lieutenant-colonel Joseph R. Smith, surgeon. Par. 10, S. O. 268, A. G. O., Washington, November 16, 1888.

Leave of absence for one month, to take effect on or about the 1st proximo, with permission to apply for an extension of one month, is granted surgeon William E. Waters, Vancouver Barracks. Par. 1, S. O. 129, headquarters department of the Columbia, November 9, 1888.

By direction of the Secretary of War, Major Charles Smart, surgeon, will proceed to Milwaukee, Wisconsin, to represent the Medical Department of the Army at the meeting of the American Public Health Association in that city, November 20 to 23, 1888, and upon the adjournment of the association will return to his proper station. Par. 2, S. O. 268, A. G. O., Washington, November 16, 1888.

By direction of the Secretary of War, leave of absence for four months is granted Captain Richard C. Newton, assistant surgeon. Par. 16, S. O. 272, A. G. O., Washington, November 21, 1888.

By direction of the Secretary of War the leave of absence granted Captain Marshal W. Wood, assistant surgeon, in Special Orders, No. 257, November 3, 1888, from this office is extended ten days. Par. 12, S. O. 270, A. G. O., Washington, November 19, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING NOVEMBER 24, 1888.

HEFFINGER, A. C., passed assistant surgeon, ordered to the United States Steamer "Kearsarge."

BRYANT, PATRICK H., assistant surgeon, ordered to the Naval Hospital, Brooklyn, New York.

MCMURTRIE, DANIEL, surgeon, ordered to the United States Receiving-ship "Vermont."

DRENNAN, M. C., surgeon, detached from "Vermont" and to the "Atlanta."

WINSLOW, G. F., surgeon, detached from the "Atlanta" and placed on waiting orders.

MCCLURG, W. A., passed assistant surgeon, detached from the "Tallapoosa" and to the "Kearsarge."

VON WEDEKIND, L. L., assistant surgeon, ordered to the "New Hampshire."

HEFFINGER, A. C., passed assistant surgeon, detached from the "Kearsarge" and to the "Tallapoosa."

STEPHENSON, B. F., surgeon, detached from Navy Yard, Boston, and to the "Wabash."

OBERLY, A. S., medical director, ordered to the United States Steamer "Richmond."

JONES, W. H., surgeon, detached from the United States Steamer "Richmond" and wait orders.

COMMENCEMENT.

DARTMOUTH MEDICAL SCHOOL. — Commencement exercises were held at the Dartmouth Medical College, Tuesday, November 20th, and twenty-six graduates received diplomas.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — There will be a meeting of this Society, at 19 Boylston Place, on Monday evening, December 3, 1888, at 8 o'clock. Readers: Dr. J. J. Putnam, "A case of Hereditary Muscular Dystrophy, with Microscopic Demonstrations;" Dr. W. A. Dunn, "Three cases of Perityphlitis, with recovery." Balloting for Associate Members at 9 P. M.

T. F. SHERMAN, M.D., *Secretary.*

DEATHS.

Died in Chelsea, Mass., November 17th, Leverett Duncan Gunter, M.D., at the age of forty-nine.

Died in Malden, Mass., November 25, 1888, Charles Bailey Shute M.M.S.S., aged forty-five years.

In South Dartmouth, Mass., November 11, 1888, Francis Dana Bartlett, M.M.S.S., aged eighty-five years.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of Ophthalmic Practice. By Charles Higgins, F.R.C.S.E., Ophthalmic Surgeon to Guy's Hospital; Lecturer on Ophthalmology at Guy's Hospital Medical School. With Illustrations. Philadelphia: P. Blakiston, Son & Co. 1888.

Practical Anatomy: a Manual of Dissections. By Christopher Heath, F. R. C. S., Holme Professor of Clinical Surgery in University College, London, etc. Seventh Edition. Revised by Rickman J. Sadlee, M. S. Lond., F. R. C. S., Teacher of Operative Surgery, and late Demonstrator of Anatomy in University College, London, etc., etc. With 24 Colored Plates and 278 Engravings on wood. Philadelphia: P. Blakiston, Son & Co. 1888.

Photographic Illustrations of Skin Diseases. An Atlas and Text Book combined. By George Henry Fox, A.M., M.D. Hand-colored plates; nearly one hundred cases from life. New York: E. B. Treat, No. 771 Broadway. Parts 7 and 8.

A Plea for the more General Adoption of Antiseptics in Midwifery Practice. By Charles J. Cullingworth, M. D., Obstetric Physician to St. Thomas Hospital.

On the Preventive Treatment of Calculous Disease and the use of Solvent Remedies. By Sir Henry Thompson, F. R. C. S., M. B. Lond., Surgeon Extraordinary to His Majesty the King of the Belgians; Consulting Surgeon and Emeritus Professor of Clinical Surgery to University College Hospital. Third Edition. Philadelphia: P. Blakiston, Son & Co. 1888.

Clinical Lectures on Albuminuria. By Thomas Grainger Stewart, M.D. Edin., etc., etc. New York: William Wood & Co. 1888.

A Manual of Dietetics for Physicians, Mothers, and Nurses. By W. B. Pritchard, M.D. Dietetic Publishing Co., New York.

On the Treatment of Cystic Goitre. By T. Mark Hovell, F.R.C.S.E. London: J. & A. Churchill. 1888.

The Diagnosis and Treatment of Diseases of the Rectum. By William Allingham. Edited and revised, with much additional new matter, and numerous diagrams, by Herbert Wm. Allingham. Fifth edition. London: J. A. Churchill. 1888.

Mineral and Thermal Springs of California. By W. F. McNutt, M.D. Reprint.

Report on Hydrophobia. By Charles W. Dulles, M.D. Reprint. Philadelphia: 1888.

Original Articles.

A FEW POINTS IN MACEWEN'S OPERATION FOR THE RADICAL CURE OF HERNIA.

BY HERBERT L. BURRELL, M. D.,
Surgeon to the Carney and the Boston Children's Hospitals.

Since the description of Macewen's operation for the radical cure of oblique inguinal hernia appeared in the *Annals of Surgery* in August, 1886, it has apparently grown in favor. My purpose in presenting this paper is to call attention to a few details in the technique of the operation that have been suggested to my mind.

I have operated on eight cases, all of which have been successful as far as heard from. They have not all been unions by first intention, for in two of the cases scrotal abscesses formed. They have been in adults and in children, complicated and simple. In one case a retained testicle complicated the problem of obtaining a radical cure.

Regarding the operation as to permanency of cure, a sufficient time has not elapsed since the appearance of the original operation to warrant any conclusions being drawn. Personally, I feel that at least three if not five years should elapse before a hernia can be said to have been permanently cured.

First, as to what the operation is: it is an attempt to restore the inguinal canal to its normal condition, and the placing of an intra-abdominal pad in apposition with the internal surface of the internal ring. It is distinctly and strictly an operation which was devised and is applicable to oblique inguinal hernia. The operation as applied to femoral hernia is incomplete, in that it does not close the crural canal, and the closure of the crural canal, as suggested by Dr. H. W. Cushing, apparently fills the gap. I have had occasion to close a strangulated femoral hernia by the formation of an intra-abdominal pad, but the case ended fatally from exhaustion.

The intrinsic difficulty which exists in closing a hernial opening is the preservation of the cord and its accompanying vessels, and previous to the appearance of Macewen's operation I had come to believe that the only satisfactory way of absolutely closing a hernial canal would be to enucleate the cord and testicle and close the internal ring by a direct attack on its intra-abdominal surface. This operation I performed in 1884 on a priest who had been suffering for years with a painful hernia that could not be held by a truss, but of course this operation is not applicable to the ordinary patient, from the resulting mutilation.

The indications which have governed me in advising this operation have been: uncontrollable by truss hernia, painful by truss hernia, and in one case I attempted a radical cure where the mental depression coincident with existence of the hernia was very great.

The following points of importance have suggested themselves to my mind as bearing on the technique of the operation: —

a. The finding of the sac.
b. The isolation of the sac.
c. The troublesome hemorrhage and the manipulation of the tissues.
d. The introduction of the sutures.
e. The dressing.
f. The question of the necessity of truss support after the operation.

a. The finding of the sac. In performing this operation, the strictest of antiseptic precautions have been attempted, but unfortunately have not always been successfully carried out. The patient having been thoroughly anæsthetized, an incision of two or two and a half inches has been made directly over the external abdominal ring, great care being exercised to bring the incision directly over the middle of the lozenge-shaped opening and running in its direction. Then I have carefully avoided attempting to isolate the different layers which are ordinarily distinguished as covering a hernia. This I have done by having an assistant take a pair of anatomical dissecting forceps, and I have taken another, and then deliberately we have carefully divided every structure for the whole length of the incision that we have met, the assistant carefully grasping the new structure to be divided in the very depth of the incision, and I grasping the tissue directly opposite to him, and then between the two forceps I have divided the elevated layer of tissue. In this way I go on until I meet a rather thick white layer, which on being divided shows that I have entered a cavity, when I know that the sac has been reached. I never attempt to isolate the sac without opening it, for the recognition of the cavity of the sac is its distinguishing point. Therefore the whole attention of the surgeon should be devoted, from the time that he makes the primary incision in the skin, to the finding of the sac. By this means I feel that I have been enabled to save time.

If I cannot readily distinguish the sac, I allow the patient to partially recover from the ether, and very quickly the sac is distended.

b. The isolation of the sac. When I recognize that I am in the sac, from this time on I prepare it for restoration to the abdominal cavity. Should I find it adherent, as so commonly occurs, I fill the sac, through the small opening that I have made in it, with iodoform gauze, distending it in the same fashion that a mending-ball does the heel of a stocking. Having accomplished this, there is not the slightest difficulty in dissecting out with the point of a knife or the handle of a scalpel the distended sac, and separating it from the cord and its accompanying vessels.

When, however, the sac is filled with omentum, implanted, as it was in one of the congenital cases operated upon, directly on and about the testicle, one has a difficult, tedious dissection before him to carefully separate it from the testicle and return it to the peritoneal cavity. Occasionally I have had to divide the omentum into various parts and return the carefully secured ends to the peritoneal cavity.

When one has a congenital hernia to deal with, the simplest way after carefully exposing the sac is to fill the processus vaginalis with the "iodoform gauze darning-ball," and then to divide the sac into two parts, forming a distinct tunica vaginalis for the testicle, and then sewing up the proximal part of the sac and returning it to the abdominal cavity.

c. The troublesome hemorrhage and the manipulation of the tissues. In the first few cases that I did I had considerable difficulty in identifying the sac, and hence I had once a troublesome hemorrhage

from the vessels that accompany the cord. Further, in pulling on the different structures to make them out, I did an amount of damage to their vitality which should be avoided. In two of the cases I feel quite sure that the manipulation of the tissues, especially the dragging of the testicle out of the scrotum, had much to do with the formation of scrotal abscesses. This I believe can be avoided by the "darning-ball of iodoform gauze."

d. The introduction of the sutures. I can only say that I have tried almost all of the different patterns and forms of needles, and have found that I could place the stitches more accurately, and this is really one of the most important points in the whole operation, by a Hagedorn needle in a good needle-holder. I have, after carefully separating the sac the whole length of the inguinal canal and for a half an inch around the intra-abdominal surface of the internal ring, placed a stitch in the very extremity of the sac and transfixed it through and through, and brought it out, after traversing the inguinal canal, through the muscles of the abdomen, pulling up the sac inside the abdomen; the suture pulling up the sac in the same way that a Venetian blind is raised. This suture is not fastened in position until the end of the operation, its protruding extremity being caught in position on the abdominal muscles by a pair of pressure forceps. Then I carefully attempt to restore the valve-like form of the inguinal canal by stitching the conjoined tendon with strong silk or stout catgut to the aponeurotic structures of the transversalis, internal and external oblique. I usually place two, if not three, sutures in position, and as I tie them, have the assistant introduce his finger in the canal, and he can then determine how tightly I bring the parts together, and I run no danger of cutting off the circulation in the cord.

e. Dressing. I always consider that the point where the operation proper is finished and the dressing begins is when I have tied the last suture which closes the inguinal canal. Of course, strictly speaking, this is not the case, but it serves to emphasize the importance of the foregoing procedures.

I have in the last cases closed the opening completely, and have not used any drainage-tube; of course this means that I have had to take a great deal of time in carefully rendering the wound perfectly free from fluids. A thorough and effective flushing at the end of the operation of the whole surface of the wound with 1–1000 of corrosive sublimate is, I believe, of the greatest importance. The wound is superficially closed with a continuous catgut suture. The dressing proper is applied as follows: six sterilized gauze pads 6x8x½ are superimposed, covering the wound surface and the scrotofemoral cleft; this is held in place by a carefully applied gauze bandage four inches in width, just enough being used to steady the dressing in place. Over this is laid a piece of Macintosh, with a hole in it large enough for the penis to protrude; then this is covered in by sterilized sheet-wadding.

This is secured in position by a cravat gauze bandage six inches in width and long enough to form a double spica bandage. Over this is placed another piece of Macintosh, with a hole in it for the penis, and this is secured in position by two safety pins placed on either side of the penis and at various other points on the abdomen and thighs as may be found necessary.

f. The question of the necessity of a truss. There can be but little doubt that the wearing of an ordinary truss after a hernia operation is open to the objection that pressure on cicatricial tissue is usually followed by gradual absorption. I have never felt quite safe in recommending the entire neglect of a truss in the after treatment of this operation, and have therefore been led to use a worsted truss in much the same way that is recommended by Pye. This does not exert any undue pressure on the cicatricial tissue.

These are a few of the points that I have found of interest in performing the operation, and I can only say that they have been derived not alone from my own experience but from that of my colleagues.

AN IMPROVED METHOD FOR THE RADICAL CURE OF FEMORAL HERNIA.

BY H. W. CUSHING, M. D.,

Surgeon to Out-Patients at the Boston City and Carney Hospitals, and Assistant Surgeon to the Children's Hospital.

My patient was a boy, æt. twelve, the victim of a left irreducible femoral hernia of four years' duration, a case in which a radical cure was especially indicated and desirable. How was this result to be obtained?

A review of the literature of this subject (as thorough as possible with the time at my disposal) yielded little satisfactory information. Descriptions of the technique for inguinal herniæ are readily found, but the subject of the femoral variety is usually, except perhaps by Wood (*Brit. Med. Jour.*, June 27, 1885, p. 1280), treated in too concise a manner to be of much value. Even Macewen, whose classical description of his operation for inguinal hernia is so wonderfully clear as to leave no possibility for doubt in regard to the details of his method, dismisses the crural lesion in a most unsatisfactory way, stating (*Brit. Med. Jour.*, Dec. 10, 1887, p. 1263) that he had employed the principle of forming with the sac an intra-abdominal pad in sixteen cases; that in cases where the vitality of the intestine was doubtful it was not performed; and also in a number of cases where firm adhesions of the sac, especially to the femoral vein, rendered it impossible.

Such statements are not of much practical value to one about to operate on such a case as above described.

I solved the problem for myself as follows; and although too soon to make any positive statement in regard to the ultimate success of such a procedure, its immediate result is all that can be desired.

Operation, May 14, 1888. Anæsthetic, ether. A straight incision (Fig. 1), extending from Poupart's ligament over the crural ring to just below the saphenous opening, and dividing the superficial tissues exposed the sac, which, when examined through an exploratory incision, proved to contain omentum. The sac itself was adherent to the edge of the saphenous opening, especially along its upper border, where its attachment was quite firm. The usual manipulation of the sac failed to separate it. In order to overcome this complication, I decided to explore the sac from above. Therefore the upper

end of the incision was prolonged outwards parallel to and one half inch above Poupart's ligament (Fig. 1,

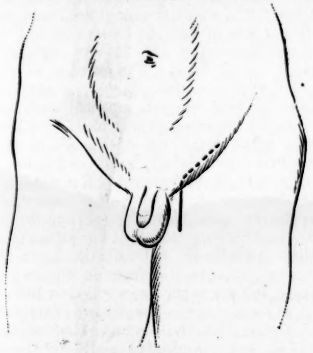

Fig. 1.

dotted line) making the total length of the operative wound three inches. By dissecting through the subjacent tissues between the spermatic cord and the outer pillar of the external abdominal ring, the sac was exposed as it entered the crural ring. It could then be freed from within outwards, by gentle traction, manipulation and dissection; and after division of the adhesions to the saphenous opening became perfectly reducible, leaving the femoral vein exposed throughout this entire distance. The sac was now opened, and with scissors and scalpel, the omental adhesions to its inner surface were with considerable difficulty divided. The omental mass, measuring two inches by one and one-half by one and one-half, was then ligated, cut away, its stump pushed back into the peritoneal cavity, leaving the sac resting free and empty in the crural ring. A continuous suture closed the sac, which was then folded on itself and fixed within the abdomen à la Macewen. The suture effecting this reduction passed through the crural canal and upwards to the surface through the transversalis fascia, conjoined tendon, and aponeurosis of the external oblique (Fig. 2). The crural ring was next closed by suturing Poupart's ligament with a

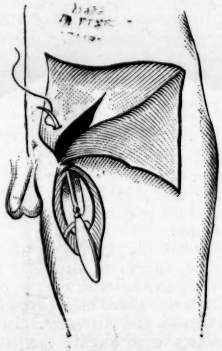

Fig. 2.

"quilted suture" to the pubic portion of the fascia lata and the fascia covering the pectineus muscle, the femoral vein being protected with a retractor, (Fig. 3). When secured, the opening apparently became impervious, the folded sac forming a pad which was firmly fixed against the internal opening

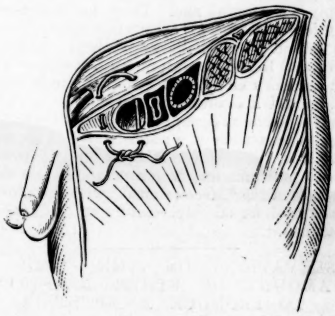

Fig. 3.

of the crural canal, while the suture tightly closed the external aperture. The pubic and iliac portions of the fascia lata forming the margins of the saphenous opening were next sutured in a manner similar to that by which Macewen causes the external pillar to overlap the conjoined tendon in the inguinal operation (Fig. 4). Operation wound

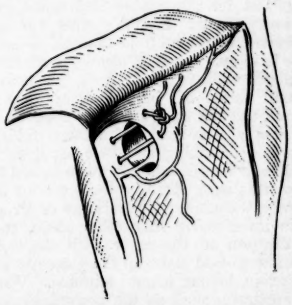

Fig. 4.

closed. No drainage. Aseptic dressing. All sutures and ligatures aseptic silk.

The patient remained in bed two weeks, and with the exception of a slight attack of tonsillitis on the ninth day, his condition was practically normal during this period. On the twelfth day following the operation the wound was dressed for the first time. A narrow red line alone marked the seat of the operation. Dressing dry, slightly stained on its inner surface at point of contact with the wound. Complete union by "first intention." An indurated mass could be felt just above Poupart's ligament, at the point where the sac had been secured. No tenderness. For the next four to five weeks a pad and bandage was worn, but its value was doubtful, and I think, from the careless manner in which it was applied, that the non-recurrence was more due

to the effectiveness of the operation than to any especial protection derived from the bandage. It was shortly afterwards rejected entirely by the patient, and since that time he has had no support.

His present condition shows how effective the operation has been. The canal is now as firmly closed as it was immediately after the operation nearly six months ago. There has not been the slightest evidence of recurrence notwithstanding the patient is an active, restless boy, who has been allowed to follow his own inclinations unrestrained, and has worn no support. He is entirely relieved, and should his condition continue as at present (there is no reason to suppose that it will not) I think this can be considered a radical cure. This method of treating femoral herniæ is, as far as I have been able to ascertain, one which combines all the advantages of the "Macewen pad" with the additional security of an effective closure of the superficial structures.

OBSERVATIONS ON THE TIME AND AMOUNT OF ETHER REQUIRED TO PRODUCE ANÆSTHESIA.

BY ROBERT W. LOVETT, M.D.

THE following observations were made in the hope of determining roughly the amount of ether necessarily used to bring a patient to complete anæsthesia, and to demonstrate, if possible, the beneficial effect of using small amounts of ether, in regard to the after-effects. The patients represent a series of sixty consecutive operations of all sorts performed at the Boston City Hospital while the writer was interne, major and minor, upon all classes of patients. Squibb's ether was used from a graduated bottle, and the amount poured on the sponge is in every case, of course, much in excess of the amount really inhaled.

Several forms of inhaler were experimented with, and the one finally settled upon as the most useful was a cone made of a towel folded over a newspaper containing an ether sponge. A towel cone alone collapsed when it was wet, and the straw cuff so often used admitted too much air to the patient with the ether. The mixture of air and ether is more intoxicating than ether alone, and a constant dilution of the ether with atmospheric air was found to lead often to the patient's prolonged intoxication, lasting several minutes. With an air-tight apparatus such as the newspaper and towel cone it was possible to administer pure ether or just what admixture of air the etherizer chose; and the etherizations with such an apparatus were much more satisfactory than any others.

The largest amount of ether used in any one case to bring the patient to complete surgical anæsthesia was four ounces, and that amount had to be used four times in the sixty cases. The smallest amount required was half an ounce, in the case of an exceptionally good child, and seven other times only one ounce was needed. In fact, the average amount of ether used in the sixty cases was only two ounces. The average amount used in the cases of six children was only one ounce.

With regard to the time required to completely anæsthetize the patients, the longest time taken in any case was fifteen minutes, in the case of a lady who was extremely nervous, where the greatest care was taken to etherize her without a struggle. Twice it took thirteen minutes and quite often ten or eleven. The shortest time taken was two minutes in the case of two children etherized by force, and three minutes in the case of several adults etherized forcibly also. The average of the sixty observations gave seven minutes as the time necessary to produce complete surgical anæsthesia.

In general the attempt was made to etherize the patients without the use of force, and the ether was applied very carefully until the trachea became accustomed to it, and ceased being much irritated by inhaling the vapor, when the cone was placed nearer the nose, until finally the patient inhaled pure ether. In this way twenty-two patients reached complete anæsthesia without the least struggle. In eleven patients the forcible choking method was tried, and the ether was applied in full strength almost at once. In the twenty-two etherizations by the gentle method, the average time required for anæsthesia was 9.3 minutes, while by the forcible method it only took 4.4 minutes. In the same way the average amount of ether used in the gentle method was two and one half ounces, while the forcible method only required one and one half ounces. But although by the forcible method the patient was etherized in less time with less ether, the results were much less satisfactory, for choking and struggling during the operation were much more common than when the gentle method was used. The application of the strong ether at once to the trachea seemed to excite a flow of mucus, which continued through the operation, and the patient was at the same time necessarily somewhat asphyxiated by this method in the beginning, and what seemed to be complete anæsthesia proved only too often to be a mixture of anæsthesia and asphyxia, and a few breaths of air would often restore the patient to a violently struggling condition. In general, a patient who was etherized without a struggle almost invariably gave little or no trouble during the operation, however long it lasted, whereas a violent struggle was often followed later in the operation by choking, persistent rigidity, and general difficulty of etherization.

As a rule, the operations were short ones, and the table shows the time that the etherization lasted, and the average amount of ether consumed during the whole etherization.

Operation lasted.					
10 minutes,	7	times.	Average amount of ether used,		2½ oz.
15 "	7	"	"	"	3½ oz.
20 "	19	"	"	"	3¾ oz.
25 "	7	"	"	"	5 oz.
30 "	10	"	"	"	6 oz.
35 "	4	"	Amount of ether used,	3½, 4, 5, and 10	oz.
40 "	1	"	"		7 oz.
45 "	2	"	"	"	7.7 oz.
60 "	2	"	"	"	8.8 oz.
90 "	1	"	"	"	14 oz.

It will be seen that in general the amount of ether required for each additional five minutes was about one ounce.

In forty-three of the patients the after-effects were carefully noted, and in twenty-eight there was no vomiting either during or after the operation, and no uncomfortable sensations beyond a moderate amount of nausea and dizziness. In eleven more the after-effects were slight: the patient vomited

once or twice, but there was no prolonged nausea or vomiting; while in six the after-effects were long continued, and there was much vomiting. The remaining patients were not noted, simply from carelessness. If the cases had been unusually severe, the after-effects would have been likely to be remembered. In general, the after-effects were least when the smallest amounts of ether had been inhaled, but personal idiosynerasy evidently counted for a good deal: two of the patients who had the most trouble afterward inhaled only four and five ounces.

The average amount of ether taken in the whole operation by patients who had no after-effects was four and a half ounces; the average amount by patients who had some slight vomiting was a little larger, five ounces; while in the patients who had prolonged vomiting it averaged seven ounces.

It is of course unwarrantable to draw any extensive conclusions from so small a number of observations, yet the series was extended enough to show, if it needed to be shown, the great advantage that it was to administer as small an amount of ether as possible in order to avoid prolonged after-effects, and also in showing the advantage possessed in etherizing patients gently rather than by force. The series contained no mishap of any sort.

Clinical Memorandum.

TWO CASES OF LAPAROTOMY FOR EXTRA-UTERINE PREGNANCY.

BY M. H. RICHARDSON, M. D.,
Surgeon at the Massachusetts General Hospital.

CASE I. — TUBAL PREGNANCY; RUPTURE DURING THE THIRD WEEK AND HÆMORRHAGE INTO THE ABDOMINAL CAVITY: LAPAROTOMY; RECOVERY.

The following case illustrates the difficulty often met with in making a diagnosis in certain obscure affections of the abdominal cavity, as well as the advantage in such cases of early operative measures.

"Jennie E. P.,[1] æt. thirty-seven. General health good, though never very strong or robust. No catamenial disturbances. Married at seventeen, and had a miscarriage at six months, a year after marriage. Since this miscarriage, nineteen years ago, has never been pregnant. Catamenia regular of late. Last flow three weeks ago. On Sunday morning, July 1st, having felt in usual health during the night, she was suddenly seized with very severe pain, sharp and darting in character, in lower abdomen. After lasting three or four hours the pain disappeared, and patient slept well that night. She was able to do her usual work the next day. Tuesday morning, July 3rd, the pain again returned, and has continued ever since. Patient has felt faint and sick, with nausea and vomiting. Bowels moved three days ago, since then constipated.

Dr. F. B. Harrington saw this case in consultation with Dr. Schofield early on the morning of the 4th, and advised her to be taken at once to the hospital, her condition being such as to make an exploration probably necessary in a few hours.

On entrance she was found to be pale, with expression of anxiety; temperature 97°; pulse 80 and weak; respiration 30. Chest negative. *Abdomen not distended*, some dulness on percussion in right iliac region, but no resistance or tumor to be felt. On vaginal examination tenderness to right of uterus, with an indistinct tumor close to uterus.

Patient vomited repeatedly during the morning of the 4th; vomit greenish and offensive. Pulse grew weaker in spite of stimulants, and the patient was rapidly becoming collapsed.

A consultation was held at noon, at which the prevailing opinion was in favor of immediate exploration by laparotomy. The diagnosis was considered very doubtful, but I think there was no suggestion made by any one present of pregnancy. The history was absolutely negative, and the only probable condition that suggested itself was hæmorrhage from some unknown cause.

Inasmuch as there was some evidence from physical examination pointing to the right ovarian region, I decided to make the incision in the right linea semilunaris, which was done three hours after entrance under ether anæsthesia and bichloride of mercury solution irrigation.

On going through the peritoneum, with the greatest care not to wound an underlying coil of intestine, there was a spurt of arterial blood so profuse and alarming that I thought for a moment that I had opened an abdominal aneurism. In a few seconds, however, clots of blood began to escape, and I saw at once that the hæmorrhage had been going on for some time, and that this sudden outpouring of blood was simply the emptying of the distended abdominal cavity. Before this operation, it will be noticed, there was no distention of abdomen observed. Yet there was sufficient pressure exerted by the escaped blood to send a stream of blood half an inch in diameter several inches into the air, — a most alarming incident, certainly, when unexpected.

On enlarging the opening to about five inches, beginning two inches above Poupart's ligament, the right fallopian tube was found with an enlargement about the size of a large olive, in which there was a rent admitting the finger tip near the ovarian extremity, from which blood was rapidly oozing.

It was very easy to bring the tube with its contents, including the right ovary, far enough up to apply Tait's knot, after which the whole was removed with the actual cautery.

The wound was closed with one row of silk sutures, after careful cleansing of the abdominal cavity, and the usual antiseptic dressings were applied. Patient made a rapid and uneventful recovery, and was discharged well, August 8, 1888.

Dr. R. H. Fitz examined the specimen and reported that it was a case of ruptured tubal pregnancy.

I think it is quite justifiable to say that this woman would have died of hæmorrhage in a short time if nothing had been done. The diagnosis was involved in obscurity and doubt, no one present having even mentioned the real cause of the symptoms. Prompt interference in this case saved a life, I have no doubt, where delay would have been followed by death either from hæmorrhage or general peritonitis. I have reported this case not only because it is in itself unusual and interesting, but to emphasize again the necessity of early exploration by laparotomy in obscure abdominal affections.

[1] Mass. Gen. Hosp. Records, vol. 236, p. 227, July 4, 1888.

CASE II. — EXTRA-UTERINE PREGNANCY; DEATH OF FŒTUS AT ABOUT EIGHTH MONTH: LAPAROTOMY AT TENTH MONTH; RECOVERY.

Mrs. B., æt. twenty-six. First seen by me in consultation with Dr. Graves, of Woburn, May 19, 1888.

She had always been well, and of good family history; was married nine years, and had never been pregnant before.

About September 1st, 1887, began to flow every day. Previous to that time menstruation had been regular to a day. The last natural flow had been August 1st. The next period came at the right time, but it didn't seem to be quite right. There was a good deal of blood, which was increased by exertion. No pain. This unnatural state of things continued, and about October 1st she began to have nausea and vomiting, which was persistent and severe. The menstruation has not been regular since October, but there has been a monthly disturbance in addition to quite a show most of the time.

During this period she got to be quite comfortable, and was able to be about her work for two or three months. Three or four months after August 1st began to increase in size; didn't feel any motion till about five months from August 1st, but was very positive that she did feel it then, though it was not very strong. Movement lasted about two months, and then stopped after a "heavy sick spell," with vomiting and chills. At this time Dr. Graves found her cold and pulseless and collapsed generally, with intense pain in the bowels and over the left hip.

The breasts were enlarged in the early part of the illness. She continued to enlarge in the abdomen and breasts, which were surrounded by a well-marked areola, and had engaged Dr. Graves to attend her in her expected confinement.

March 11th, 1888, was taken with intense pain and severe hæmorrhage. A day or two later the breasts became a good deal larger, but soon flattened out and have never become filled since.

April 2nd, Dr. Graves was called again to a similar attack. There had been quite a hæmorrhage, probably a quart in all of clotted blood. Two days later another passage of clotted blood as large as the first.

During the night of April 2nd, while Dr. Graves was present there were regular pains, but nothing came. Up to this time there had been no doubt on the part of anyone that it was a case of pregnancy.

Between the attacks of March and April the condition of the stomach improved greatly, and up to the time of my visit was quite good.

At the time of the expected confinement, nothing suggesting decidua was passed.

I found a large tumor of the abdomen, fluctuating and symmetrical. There was no resisting mass to be felt in the tumor. The abdomen was tympanitic in the flanks and epigastrium. Vaginal examination showed that the uterus was not enlarged and did not move with the tumor. In spite of the history of the case pointing almost unmistakably toward pregnancy, I was of the opinion that it was a case of simple unilocular cyst of the ovary, with unusual history and complications.

The patient was admitted to the Massachusetts General Hospital, June 20, 1888, and examined by several of the physicians and surgeons of the staff, among whom there was some difference of opinion as to the diagnosis. There was, however, no question as to the advisability of exploration.

June 22, 1888, I made an incision in the linea alba between the umbilicus and pubes three inches in length, through which I came down upon a vascular tumor with apparently a distinct muscular wall seemingly everywhere adherent, the whole suggesting strongly a malignant growth of the ovary. So little did the appearance suggest anything that could be removed, that I asked Dr. John Homans' advice as to the advisability of making an attempt at removal. He favored further exploration, and I therefore carried the incision down through the mass till I came upon a cyst in which I could feel unmistakably the parts of a large fœtus. The cavity of the tumor contained a large quantity of chocolate-colored fluid.

In enlarging the incision sufficiently to extract the child I opened a portion of the peritoneum between the sac and the uterus which had been entirely cut off from the upper part of the abdominal cavity, and which extended downward as far as the posterior cul-de-sac.

The placenta was found to be placed with its centre opposite the bifurcation of the abdominal aorta, and was everywhere adherent to the intestines and posterior abdominal wall; it was soft and friable, and I succeeded in detaching without hæmorrhage a large part of it, especially that portion which extended downwards into the true pelvis.

Drainage was provided for by placing a large tube through the posterior cul-de-sac into the vagina. It was thought best to do this because there was so much of the placenta remaining to be gotten rid of; though the opinion was expressed by some that it would have been better not to have run the risk of sepsis through vaginal contamination. The other end of the tube was left in the lower angle of the abdominal wound.

The patient made a good recovery, and was sent home in August with a small sinus still discharging from the abdominal wound. A month later she reported at the hospital for examination, very much improved in general health and appearance, and with the abdominal wound practically well.

The most important point in this case was the treatment of the placenta. Death has usually been due to hæmorrhage from efforts at detachment, or from septicæmia from long-continued absorption. I believe that moderate effort should be made in these cases to remove the placenta, and, that failing, a drainage-tube should be passed through from above out the vagina, through the pouch of Douglass.

— At a meeting of the Central New York Medical Association, at Rochester, November 20th, Dr. E. M. Moore, sen., reviewed at some length, and in a most interesting manner, a portion of his life-work as a surgeon, confining himself to his labors on the upper extremity.

A CASE OF APPENDICITIS IN A CHILD: OPERATION; RECOVERY.

BY ROYAL WHITMAN, M. D.,

Surgeon to the Orthopedic Department of the Boston Dispensary.

On Saturday, July 16th, 1888, a boy of seven, having been in perfect health, on awakening after a restless night, complained of pain in the right side and of difficulty in moving the right leg. On Sunday he was worse; the pain more constant and severe, with much tenderness in the right flank. An enema was followed by two free movements of the bowels, he cried all night with pain, and on Monday I saw him. The patient appeared in fair condition, the abdomen not markedly swollen or tympanitic, the right inguinal region extremely sensitive to pressure, dull on percussion, and on palpation a round, hard tumor about the size of an orange was apparent; pulse 110, temperature 101°. The treatment was rest in bed, liquid diet, and sufficient morphine to control the pain, with a very small amount of which he was made comfortable for the two following days, with but little change in condition. On Thursday Dr. H. W. Cushing kindly saw him with me, and it was decided to wait another day for a change in the symptoms either for better or worse. On the following morning he was much worse, pulse 120, temperature 102°, the abdomen swollen and tympanitic, the tumor somewhat larger, and better defined. Some delay was necessitated in procuring assistance, and on our arrival the mother informed us that in the interval the boy complained of such intense pain and his abdomen became so swollen that he could not breathe, so that in desperation she had given him a large enema, which had brought away foul-smelling shreds and white matter, which she had thrown away; a history of spontaneous opening of the abscess. An examination of the tumor showed no change in its outline; the temperature had gone up to 103.1°, and the pulse to 130; the patient was in a drowsy, stupid condition, from which he could be aroused only by the pain caused by examination. Some difficulty was experienced in deciding as to the proper treatment of the case. The probability of a spontaneous opening contra-indicated an operation, and the surroundings were unfavorable to its after treatment. On the other hand, the patient was much worse, and it was decided that delay would be dangerous, especially on account of the time required to procure assistance in case the symptoms became more urgent. Accordingly, with the assistance of Drs. Cushing and Peckham the operation was performed, an incision about three inches in length being made over the outer third of Poupart's ligament. On dividing the abdominal muscles, the adherent wall of the abscess was opened, and about an ounce of foul pus evacuated. The cavity, which was about the size of a hen's egg, was thoroughly washed out with hot water, during which a seed, apparently of an orange, came away, two drainage-tubes were inserted, and the remaining space packed with iodoform gauze. The after history of the case is uneventful: the temperature fell at once to normal, the packing and tubes were removed on the fourth day. During the absence of his mother, the child walked about the house on the fifth day; was dressed and on the street on the tenth day, when he was practically well, sixteen days after the first sign of the affection, though the wound did not completely close till a week later. He has since remained without a symptom to remind him of his illness. Several days after the operation the mother noticed a small amount of blood in the first dejection, making it probable that there had been an opening into the rectum which had immediately closed. The particular interest in this case is, I think, in the question as to whether or not, under the circumstances, an operation should have been performed. It might have been better to have made an examination by the rectum with the design of enlarging a possible opening. When, however, ether had been given, and the abdominal walls were relaxed, the tumor was found to fill the lower half of the right abdomen, so that the indications for an external opening seemed clear. In any event the result under a different treatment could hardly have proved more satisfactory than under that pursued.

A CASE OF MACEWEN'S OPERATION (FOR THE RADICAL CURE OF INGUINAL HERNIA) IN A GIRL, RESULTING IN THE CURE OF HABITUAL INCONTINENCE OF URINE.

BY ROYAL WHITMAN, M.D.

This patient, a girl of eleven years of age, was brought to me last spring, more especially on account of an antero-posterior curvature of the spine. In addition she had a right inguinal hernia about the size of a small lemon, which had existed an indefinite time, and was the occasion of more or less discomfort; it was increasing in size, no attempt having been made to control it with a truss. There was also a history of habitual incontinence since infancy, making it impossible, as her mother expressed it, to keep her clothes in decent condition. As treatment by drugs had proved of little service, a radical cure of the hernia was advised, in the hope that the shock of the operation, with subsequent confinement to bed, might relieve this condition. On April 9th, 1888, Macewen's operation was performed, with the assistance of Dr. George Haven. The patient was about as usual on the eighteenth day without support, complete control of the urine having been established. Since then, her mother says, she has improved greatly both mentally and physically.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

G. H. MONKS, M.D., SECRETARY.

Meeting, Wednesday evening, November 7th, at 8 o'clock. Dr. J. C. Warren presiding.

The Chairman having declined renomination, Dr. E. H. Bradford was, on the motion of Dr. M. H. Richardson, elected by acclamation Chairman of the Section for the ensuing year.

Dr. M. H. Richardson reported

TWO CASES OF LAPAROTOMY FOR EXTRA-UTERINE PREGNANCY.[1]

Dr. J. W. Elliot said: I congratulate Dr. Richardson on his success. I think both cases are

[1] Page 519 in Journal.

brilliant. The second case was evidently one of abdominal pregnancy. The only other operation of this sort that I have seen was done by Schroeder. In this case the patient died. I think the mortality in these operations is very high, because of the great danger of septic infection. If there is no septic infection, the abdominal pregnancy usually goes on to the hardening of the fœtus, and operation is not necessary. I would like to ask Dr. Richardson what the final result was; how much cavity was left?

DR. RICHARDSON: There was a very small sinus at the end of the abdominal wound. The vaginal tube was left in a few days, to see what would happen. The result was good. Through this long tube there was constant irrigation, corrosive sublimate being used. The patient had no septic trouble whatever. The temperature immediately fell, remaining perhaps a degree or two above the normal.

DR. ELLIOT: I saw the sac, and thought it an extremely difficult one to keep sweet, as the placenta was partly torn off and ragged. The sac was very irregular in every direction. I am surprised that it did so uninterruptedly well.

DR. CABOT: Was there any appearance of suppuration to account for the temperature?

DR. RICHARDSON: The temperature was about 101° the day before the operation. After the operation it speedily fell. There was a hectic condition at the first time I saw the patient; but no evidence of suppuration.

DR. NELSON: I would like to ask if any portion of the sac was removed? if so, how much?

DR. RICHARDSON: There was no attempt to remove the sac, though I did remove about half or two-thirds of the placenta. I think any further attempts to remove the placenta or the sac at all would have been bad practice. I would like to ask Dr. Elliot if the cases he referred to where autoinfection was possible were cases where the fœtus was dead?

DR. ELLIOT: I do not remember. There are two distinct classes of cases: (1) where the fœtus gradually dries up and becomes stone. It is generally considered by the best authorities that where these cases give no trouble there is no occasion for interference; (2) where the fœtus has become macerated, causing infection and death by septicæmia.

I have known of several such cases as this. If you can open one of these sacs without opening the peritoneum, the result is much more favorable, as it would be in any abscess. I thought the sac in this case of Dr. Richardson's was principally thickened peritoneum. The general irritation of the advancing process had thickened the peritoneum outside of the sac which held the amniotic fluid originally. I had an impression that in this case there was suppuration. The temperature was high; the patient looked hectic.

DR. RICHARDSON: There was no bad odor; the fœtus was macerated.

DR. ELLIOT: The maceration of the fœtus is, I take it, a process different from that where the fœtus becomes hardened like stone.

DR. NELSON: I saw a case last spring that simulated this one. The catamenia had been absent, yet there was reason to think the woman was not pregnant. She had never borne children. When I saw her she was in a state of collapse. Temperature low, some pain, some nausea; but this class of cases was unfamiliar to me at that time, and I did not make the diagnosis. At the autopsy a sac was found, and an abdominal pregnancy between the second and third month. The abdominal cavity was filled with blood which came from the rupture of the sac. Had the diagnosis been made and an operation performed, possibly the woman could have been saved. It was not so easy a case for operation as the case reported, because it was not tubal, but abdominal, and the sac more the nature of that described in the second case, which went on to full term. In these cases an early operation is advisable certainly.

DR. JOHN HOMANS, 2nd: The point in these cases lies, I think, in recognizing the condition early. It seems to me, if the condition were recognized earlier and an operation performed, the high mortality would be very much diminished. There is a true autoinfection which takes place in almost every case. I have seen three operations, and in each case there had been some slight fever before the operation. In one case the fœtus was not only macerated, but separated, so that the finger introduced in the cyst struck sharp spiculæ of bone; and the fluid in which the bone floated looked and smelled like pus. The patient had had a high temperature for some time; and the operation done with the idea of encountering pus rather than extra-uterine pregnancy.

I think the general opinion now is that it is a matter of doubt whether there is a true abdominal pregnancy; that an extra-uterine pregnancy is most probably either tubal, tubo-ovarian, or tubo-uterine; that a true abdominal pregnancy, if it occurs at all, is extremely rare.

DR. ELLIOT: It seems that in these cases of abdominal pregnancy, while the fœtus is alive, the difficulty is in freeing the placenta, which very often is glued to some very important organ richly supplied with blood. If you pull the placenta off, it is almost impossible to stop the bleeding. If the fœtus had been alive in Dr. Richardson's case, probably the only way he could have stopped the hæmorrhage would have been to tampon the whole pelvis with iodoform gauze. If the placenta had been in the tube, or just oozing out, you might tie the tube. That is a very simple thing to do, but if the placenta has formed on some organ in the abdominal cavity, it is not so simple. One treatment for that sort of placenta is to sew the sac to the abdominal wall, and wait for it to slough out. The case I saw Schroeder do, in which the fœtus was living, died of hæmorrhage. He had made the diagnosis of abdominal pregnancy,—the fœtus could be distinctly felt,—and waited till labor pains came on, or a general disturbance that suggested that the fœtus was alive. He waited with the idea that at that time the placenta would be more easily separated; I suppose on the principle that a ripe apple falls easier. However, in spite of every precaution, the patient died of hæmorrhage from the site of the placenta. The site of the placenta in Dr. Richardson's case illustrates the difficulties that might have occurred. If that child

had been alive, I think the operation would have been one where the mortality is 90%. If you leave the placenta, you have to wait for it to slough out (I speak of the living child), and that, in case of a placenta at full term, is a pretty serious thing in a fresh case. It would be different in an older case, where adhesions protected the general peritoneal cavity, and where there was no blood of any consequence.

Dr. Nelson: The difficulty of removing the placenta occurred to me in making the autopsy in the case I mentioned. In this case it would not have been a very difficult thing to remove the placenta. An early diagnosis is, of course, very essential.

Dr. Richardson: In conclusion I would say that these cases are entirely separate from each other. No matter what the theory of abdominal pregnancy may be, the condition that meets the practical man in the case I first reported is, I think, the important thing. I believe that Tait has thirty-five successful cases of extra-uterine pregnancy, with two deaths — a number of them viable children. I think when you have an acute abdominal case, where the woman is in a very serious state of collapse, with a low temperature, there probably is a hæmorrhage which requires some interference; if a high temperature, there is apt to be general peritonitis, perforation, or something of that sort. The practical deduction is that we should not delay, for the danger of an exploratory laparotomy is almost nothing; and in every case where I have gone into the abdomen of a patient suffering with these acute symptoms, I have found something to be remedied. The experience of the other surgeons at the Massachusetts General Hospital is the same.

Dr. Royal Whitman reported

A CASE OF APPENDICITIS IN A CHILD: OPERATION; RECOVERY;[1]

and then showed the patient.

Dr. Rotch: I should like to ask how long one ought to wait in these cases? Last summer I had a case almost identical with Dr. Whitman's in the general symptoms and also in the tumor, which was well defined in the right inguinal region. The patient was a boy 10 years old. I waited two days, and the symptoms at the end of forty-eight hours improved rather than grew worse. The child entirely recovered. I do not think this to have been a case of simple fæcal accumulation.

Dr. Whitman: In the case I have reported I think the operation might have been done several days earlier. Apparently the child was doing well — not very feverish and not in great pain. On opening the abscess it was plain it might have been opened several days before just as well. The operation was done on the sixth day.

Dr. Cabot: I remember distinctly two cases in which there was a distinct tumor perfectly defined, which under the expectant plan entirely disappeared. It seems to me that as long as the patient is improving or not getting distinctly worse, if the temperature is not very high it is perfectly proper to wait, but to be in readiness to operate immediately on a sudden return of symptoms. The danger in these cases is that if pus does form the abscess may suddenly open, and if the surgeon is not at hand the patient's chances are lost. The reason for waiting is, that in a great many of these cases the hard tumor, which is a wall of fibrinous exdation in the peritoneum, surrounds the pus completely — an exudation which perfectly absorbs afterwards if let alone. And the only way to tell whether there is pus is, I think, in the absence of collapse, by the continuance of the high temperature. In connection with this foreign body that Dr. Whitman found in the abscess and has shown to us, I would speak of three cases showing the way in which the appendix apparently acts as a trap to remove foreign substances from the intestine. I have seen three cases in which pins have been discharged from this region, about the cæcum. The first case was a young woman who swallowed a pin when five years old. When she was twenty years old she had an abscess in the right flank that finally opened and discharged the pin. Another was a child who had swallowed a pin two or three years previously; and the third case a woman who swallowed a pin ten years before she had the attack of appendicitis. In each case the pin was discharged from an abscess in the right flank. In the case of the child I opened what I thought to be a perinephritic abscess. Two or three weeks afterward the pin presented itself at the orifice and was picked out.

Dr. Richardson: I think it is best to bear in mind that these cases are of two classes clinically: (1) cases with general peritonitis, with distention and no tumor; (2) cases with a distinct tumor. I have seen once or twice a week for several weeks a patient with a large hard tumor in the region of the vermiform appendix. The patient has had five or six attacks where delay has been followed by diminution in the size of the tumor. I have reported several cases where the symptoms entirely subsided with rest in bed. I have operated on several where evacuation of pus was followed immediately by recovery. If we have a case, like one I saw the other day, — a boy with great distention of the abdomen, where it was impossible to make out by rectal or any other examination any hardness or tumor, I think it is very important to operate immediately if you are going to operate at all, and even then the prognosis is extremely bad. In a case where there is a tumor and no general peritoneal infection, it seems to me that one is not justified in waiting, if the symptoms are getting worse, if the temperature is rising, or if there is any evidence whatever of any general constitutional infection. I think we meet with cases where objection is made to a laparotomy, because so many patients get well without it. A great many cases do get well, but I think they all belong to that class where the general peritoneal cavity is not easily infected, where the vermiform appendix is seated anatomically behind the cæcum and out of the way of the general cavity. I believe, if there is a distinct tumor and the constitutional symptoms rather more than moderate — temperature 103° or 104° — that it is best to go in early and not even wait the two days that Dr. Rotch suggested. I operated on a child in my service at the hospital, which I wanted to leave to Dr. Warren, whose service followed mine. The temperature was 103°, and it did not seem wise to postpone the operation

[1] Page 551 in Journal.

even twenty-four hours. In this case the evacuation of one ounce of pus was followed by immediate recovery. I think on the other side we constantly see cases where an operation is absolutely valueless. I remember a case of last year where there was an unmistakable tumor in the right lower quadrant, where incision failed to find anything whatever. I operated myself in one case where I used the aspirating needle and got pus, as I thought, but found that the needle went into the intestines and got contents resembling pus. I think each case should be judged on its own merits. It is extremely difficult to lay down any rule.

DR. WHITMAN then reported a

CASE OF MACEWEN'S OPERATION (FOR THE RADICAL CURE OF INGUINAL HERNIA) IN A GIRL, RESULTING IN THE CURE OF HABITUAL INCONTINENCE OF URINE;[1]

after which he showed the patient.

DR. H. W. CUSHING read a paper entitled

AN IMPROVED METHOD FOR THE RADICAL CURE OF FEMORAL HERNIA.[2]

The patient was shown.

DR. H. L. BURRELL read a short paper on

A FEW POINTS IN MACEWEN'S OPERATION FOR THE RADICAL CURE OF HERNIA,[3]

and showed some patients in which this operation had been done.

DR. MARCY: The essentials of my operation are the obliteration of the sac by its complete removal and the closure of the internal ring. After opening the sac, the introduction of two fingers in my experience has been ample to guide in its dissection and to lift it in such a way from the tissues that you can thoroughly hold it in control. I don't object to the rough manipulation of the sac, for the very reason that it is to be removed. The removal is accomplished at the internal ring by sewing at its very base with the continued double tendon suture, and then the sac is cut off near the double line of sewing, and the peritoneum is then, as I believe, left thoroughly smooth on its inner surface. There is no depression for the future catching or lodgment of the internal abdominal contents. The next step of the operation is the refreshment of the pillars of the ring. The internal ring is closed by a very carefully placed double suture in the same way, *i. e.*, using a needle having its eye near its point and guiding it with the finger in the ring until it has been as nearly closed as is safe. Then the continued double suture is used further to sew down over the cord as carefully and closely as the judgment and experience of the operators will warrant. When this layer has been completed the ends of the suture are either tied in a single knot and cut off or else continued in the third layer, which (I always like to emphasize) closes in the same way the external deep tissues to make the external ring, and then the superficial tissues are closed by the continued buried tendon suture, which I have adopted within a year. It is what ladies call a "blind stitch," *i. e.*, the deep layer of the cutaneous surface is sewed from side to side so that the superficial layers of the skin are absolutely approximated without a vestige of stitch in sight. Each stage of the operation is conducted under antiseptic methods. Generally I like irrigation with a solution of 1–2000 corrosive sublimate as well as 1–1000. The skin must be thoroughly dry before collodion will become firmly adherent. I dust over a little iodoform to make sure that the drying is absolute and complete, and then I cover the wound with iodoform collodion strengthened by a few fibres of cotton. This is the dressing. There is no external pad applied. With this dressing the patient, in my later cases, is not absolutely kept in bed. One of my last cases of operation, that of a brother physician, was up every day; and this specimen (specimen exhibited) which was removed shows a considerable portion of omentum and sac, it being a recent scrotal hernia with omentum adherent at the base of the scrotum. Here is another specimen lately removed by myself. For four years the man had had a confusing tumor. He had once or twice hæmatocele; had been tapped by one or two besides myself; but the cause of the hæmatocele was unknown to us all. He had above it a large, thoroughly fixed, firm tumor about the ring, and, above that, what I supposed to be an omental hernia. On opening the scrotal sac, which we did first, it was clearly shown that the testicle was diseased, and the testicle itself was removed. Then there followed an extension of the opening into the hernial sac, and this large mass of omentum was sewed across by the continued suture because the omentum was thoroughly compressed in such a mass that it seemed hardly safe for its return. It was closed and sewed across in the way mentioned. The result I am happy to exhibit. (Patient here shown.) So far as I have been able to follow cases, a large majority of them have remained complete cures. I have operated on hernias after this method about twenty years. It is quite a period since I have used trusses after operation.

DR. CHEEVER: It would be obvious to any one that in the male the inguinal canal, cord, testicle are the great obstacles to the cure of hernia; and if the testicle should be removed and the whole thing shrink up we should gain a great deal faster. Castration for the cure of hernia was largely practised in France before Paré's time. The government finally interdicted it as "destroying too many subjects for the king's armies." Ambrose Paré invented the metallic suture for hernia. He calls it the "punctum aureum," or "golden stitch." He sewed up the ring somewhat in the manner that John Wood did subsequently; as to practical points, I have been interested in hernia a long while, but rather discouraged with the results of Wood's operation, which I did many times twenty years ago. The introduction of antiseptic surgery has rendered possible a boldness we could not dream of before; and has converted a hidden and obscure operation, which had to be done beneath the skin, into one of open and plain procedure. The great point of Mr. Wood's operation was to invaginate, to draw up the sac and surrounding tissues much like Macewen's method; and to approximate

[1] Page 551 in Journal.
[2] Page 546 in Journal.
[3] Page 545 in Journal.

the pillars, and sew them down on the cord. The point of the operation, however, was that in order to render it safe it was intended to be done subcutaneously. It was a modification of subcutaneous surgery. Wood concluded that if he could make aseptic wounds into the peritoneal sac with a wire suture, the wound would be comparatively free from suppuration; and aimed to get his cure by invagination, glueing down of the pillars, and melting down, by fibrinous adhesion, the sac and pillars into one plug, which was intended to close the inguinal canal. The result in many cases was suppuration; in some cases avoidance of suppuration. The wires, which were twisted down firmly and allowed to remain undisturbed for ten to fourteen days, were directed to be untwisted gradually; but it was often found that they had loosened by the suppurative process. A secondary result was occasional burrowing of pus and pelvic abscess; and occasionally, though rarely, fatal peritonitis. Now the modern method aims to do the same thing in the open way, and does it much more securely and thoroughly. A long while ago Dr. John B. S. Jackson said to me: "Doctor, you will never get a cure until you can obliterate the serous canal;" and that is true of inguinal hernia, but not of femoral, for there is no serous canal there. The cures by Wood's method in my hands were not more than five or six that I was able to trace. I lost sight of a good many cases. Buried sutures with wire I tried; but they were invariably cast out by suppuration in every instance. I have seen them remain a long while in tissues which you would suppose much more irritable, notably the larynx, where, in thyrotomy, I have left in buried sutures which were never thrown out. The femoral operation, which has nothing to do with a serous canal, by Wood's method, was extremely difficult of performance, and did not succeed. I did it once or twice, and it failed. The difficulties about the femoral canal under the old method were to try to approximate the walls, which were rigid. In seeking to invaginate the cribriform fascia, one practically succeeded in invaginating nothing at all, and forced together tissues which inevitably ripped out afterwards under the sharp pressure of the metallic stitch. This method of Dr. Cushing's seems to be a bold and large improvement over the old one; and completes the link wanting in Macewen's operation, by rendering you able to *invaginate*, which you cannot do by any external method about the crural ring. The wonderful safety of present processes of antisepticism in operating on these structures I cannot speak too much of, because I saw so much trouble in the old methods, by the throwing out of sutures, suppuration, etc. I think worsted pads and devices of that kind are externally useful. I think, perhaps, the profession has too much lost sight of one pad John Wood invented, which is extremely good; and I would speak of it warmly in connection with hernia and varicocele combined, which is not an uncommon affection. He devised a flat boxwood pad like a horse-shoe, with one arm larger than the other, and both of them *flat*. The two portions pressed over the outer and inner pillars of the ring, and the result was flat pressure by the larger end of the pad over the seat of bulging of the hernia. This is comfortable, and does not irritate. Applied naked to the skin it allows the circulation to go on without obstructing the varicocele, and it controls perfectly the hernia. His theory was — and I believe it a correct one — that, where the cure of hernia depends upon lymph effused in a large plug, the subsequent failure is due to the absorption of that lymph; and that this absorption is hastened very much by pressure; consequently that all trusses applied after operation for hernia are evils; and although he felt obliged to resort to them, he sought to diminish the rounded pressure of the pad by substituting the horse-shoe pad, which left between these two arms a free passage for the vessels, and avoided pressing into the cavity of the canal itself.

Dr. Clark: I know Dr. Marcy's method very well. I remember his first case, which was in 1870. The patient, a female, was taken on Thursday, and on Sunday morning there was stercoraceous vomiting. A spray of carbolic acid was used, and the canal was completely obliterated by the use of the catgut ligature. The patient lived five years, with no return of the rupture. She had suffered very much for many years. It was with very great difficulty that we operated. The patient was subject to asthma, and had a violent cough, and everything was unpromising. She died of pneumonia five years afterwards. More recently I saw a case of Dr. Marcy's, a case of strangulated hernia which came on suddenly in an old man. The hernia was reduced after incision, the ring sewed with tendon suture, and then there was a firm pad, hard and solid, but so placed that the cord was not unduly pressed upon. This case got along very well without any bad symptom. For dressing, iodoform and cotton and the iodoform collodion sufficed. There was no rise of temperature, and the patient recovered very speedily. Another case of Dr. Marcy's I have seen recently, where a considerable amount of the omentum was cut away. I have tried some cases with this method myself, and have been quite successful.

Dr. Cabot: During the last summer I had three cases of femoral hernia. In one of them the operation was done simply as radical cure for hernia, and in the other two the radical cure was done in connection with the relief of strangulated hernia. In one of these cases the sac was rather dark and mulberry-colored. For this reason I did not like to return it, and therefore sewed the neck of the sac close to the inside of the ring and brought it together by several sutures. I saw the case a few weeks afterwards, and there had been no recurrence.

In the other two cases I did the operation very much like that described by Dr. Cushing. I supposed I was doing the ordinary Macewen's operation; and supposed he had applied it in the same way to the femoral hernia. The first of these two cases was in a Frenchwoman, a cook who had a hernia at least as large as two fists. The sac was a thick one, and formed quite a large mass. Having threaded it in the way described as "through and through," and stitched it well up inside of the ring, I pulled on the thread and pushed the sac up. It went with difficulty, because it was so large and the ring so small. I then brought the ring together firmly outside. There was a good deal of constitu-

tional disturbance, I suppose from the fact that there was so much sac that possibiy some small portion sloughed. The woman was sick in bed three or four weeks. She had, however, a good recovery, and a large, hard mass filled the whole of that portion of the pelvis where the hernia formerly existed. In the other case, the patient being a man, the sac was small. I opened it; sutured it in the way Dr. Cushing has described, brought the pillars together as well as possible outside of it. The man began to have delirium tremens the night after the operation, and was out of bed pretty much every day the first week or so, without any apparent detriment, so far as cure went. Everything healed by first intention. The patient went out of the hospital three or four weeks later with a cure as apparent as any cure is immediately after the operation. Dr. Burrell spoke of dividing the sac (in congenital cases) into two parts, leaving the lower portion with the testicle to form the tunica vaginalis, and stitching the upper part together, reforming the sac and tucking it inside. I have separated the sac in that way, simply cutting it off below and without afterwards reforming the original sac, put a string through it, and put it back without stitching it together. I don't think that there is any gain in having the part of the sac which is replaced in the form of a sac.

DR. RICHARDSON asked Dr. Burrell how long the operation took.

DR. BURRELL replied that his earlier operations took fully an hour; the last one less than one-half hour.

DR. RICHARDSON: Dr. Burrell spoke of having given up the method of going down by layers on the sac. I think that it is anatomically impossible to distinguish the layers.

DR. BURRELL: And yet you will hear surgeon after surgeon attempting to distinguish each layer as he cuts down.

DR. RICHARDSON: Yet you can't recognize anything but the cremaster and sac. I don't know whyit is necessary to open the sac.

DR. BURRELL: The advantage of opening the sac is this: in the first place, by the opening you discover that it is the sac, and in the second place you can introduce into the sac the iodoform gauze that renders it perfectly tense, as if you poured in a lot of melted tallow. It makes the processus vaginalis like the finger of a glove.

DR. GREEN: In regard to the use of trusses after operation, it is simply a choice of evils. There is no doubt as to the pressure of the truss weakening the cicatricial tissue; and if any other device can be arranged that will retain the hernia it will be undoubtedly better than the truss. The only objection to the bandages is that at the very time when the most support is needed, bandages give the least. For instance, if the man stoops, and attempts to lift, the bandage is loosened. Nothing but a spring will give the necessary firm pressure at that time. I should only recommend the truss, because, though far from perfect, it is the best thing we have at present.

DR. WARREN: Have you noticed any difference in results since antiseptic methods have been in vogue in the number of cases, where an operation has been unsuccessful, and where patients come back to you for trusses. Are there fewer now than formerly?

DR. GREEN: I think so. It is hardly time to judge of the ultimate results from MacEwen's operation. I have hopes that the operation will prove a greater success than any of those previously tried. It seems to me to be based on common sense principles more than any operation yet devised.

DR. NELSON: After my operation two years ago I tried faithfully to wear a truss, but found it impossible to bear it; and I fail to see the necessity of it, or any other support. After the buried suture has closed the ring and united the other layers very firmly, the effectiveness of the very simple dressing Dr. Marcy has mentioned I think ought to be emphasized. When the edges of the wound have been coapted by the blind stitch, the collodion dressing in itself is sufficient, *i. e.*, iodoform collodion reinforced with a few fibres of cotton; neither bandage nor truss is apparently necessary.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK, OCTOBER 22, 1888.

DR. PAUL F. MUNDE, of New York, read a paper on

THE VALUE OF ALEXANDER'S OPERATION FOR SHORTENING THE ROUND LIGAMENTS ESTIMATED FROM THE RESULTS OF TWENTY-THREE CASES.

Dr. Mundé stated that he felt it his duty to report his experience with this much-discussed operation, as he was, so far as he knew, the first to perform it in this country. In the reports of his first six cases (1885–86) he had commended the principle of the operation, but doubted whether it would be practicable, owing to the occasional difficulty in finding the ligaments. An increased experience has, however, led him to believe that, when the ligaments cannot be found, it is due to the failure to recognize the exact anatomical landmarks which render easy the seizure of the diffuse terminal portions of the ligaments.

He stated that we are now able to satisfactorily answer the three points which are vital to the operation securing a permanent position in gynæcological surgery. These points are the following: —

1. Can the round ligaments always be easily found, drawn out, and the uterus thus be elevated and anteverted?

2. In which forms of displacement of the uterus is the operation indicated justifiable, and likely to be followed by complete and lasting relief?

3. Is the elevation and suspension of the uterus by the shortened round ligaments alone sufficient, and is the result permanent? Or does the latter operation require an additional one on the vagina or pelvic floor to ensure a complete and enduring recovery?

Dr. Mundé stated that the existing diversity of opinion in regard to these points is due to opposition to the operation on theoretical grounds, to failure to find the ligaments, or, in some cases, failure to supplement the shortening of the round ligaments by a plastic or other operation on the vagina or pelvic floor.

He believed that the greatest difficulties in the way of finding the round ligaments were, too great

attention to the details of dissection, and failure to recognize the anatomical landmarks of the terminal portions of the ligaments. He recommended a certain boldness on the part of the operator, and gave the following details as his method of procedure. Stand on the side of the patient opposite to the ligament to be operated on; locate the pubic spine with the index finger of the left hand, pressing firmly so as to leave a dent in the skin; make a quick oblique incision, from one and a half to two inches long, right down to the spine; let the finger touch the spine, establishing a guide, until the ligament is distinctly recognized, isolated, and drawn out. The small knuckle of fat which emerges through the slit made in the external ring, indicates the location of the terminal fibres of the ligament; and the pillars of the ring are exposed by scraping with the handle of the scalpel. After the outlines of the ring are defined, lift the whole mass of fat with a pair of long forceps, and pass an aneurism needle under it close to the bone. Any areolar attachment may be loosened by the handle of the scalpel, and traction is then made and maintained until a firm resistance is encountered and the length of the ligament withdrawn. Divide the nerve which lies to one side and below the ligament, draw out the ligament to its full length, retaining it with a sound or repositor, cover the wound with sublimated gauze, and repeat the operation on the other side. After both ligaments have been exposed and retained by the sounds or repositors, draw on them, at the same time, until the uterus is elevated and anteverted. The ligaments are then stitched into the wounds, and a split-bone drainage tube is inserted. When all the sutures have been tied, the sounds or repositors are removed, the pubic attachment is divided, and the slack of the ligaments cut off smooth with the skin. The wounds are then irrigated with a 1-10,000 sublimate solution, and are dressed with sublimated gauze and a spica bandage.

When the fundus uteri is not bound down by adhesions and the ligaments possess their normal play in the inguinal canal, the uterus can always be elevated and anteverted. Congenital absence or atrophy of, or abnormally small ligaments, may prevent success in performing the operation.

In answer to the second query, Dr. Mundé said that the operation is indicated in long-standing retroversion or retroflexion of the uterus, especially when associated with descensus or actual prolapse of that organ with cystocele or rectocele. He would except as suitable for the operation women of such advanced age that the defective nutrition of all tissues would render firm union improbable. Another indication for the operation is a sharp retroflexion with congenitally shallow vagina — one which offers no support for an intravaginal pessary. Cases of backward displacement and descensus of moderate degree, which are comfortably managed by vaginal supporters, and cases where the retro-displaced fundus is more or less immovably adherent to the rectum do not call for Alexander's operation. Too much is asked of the round ligaments when they are expected to permanently sustain an enlarged uterus with a thick and relaxed vaginal column dragging on it; in such cases a supplementary plastic operation on the vagina or pelvic floor should be performed.

In answer to the third query, Dr. Mundé stated that, if the pelvic floor is intact and the displacement is merely a retroversion or retroflexion, with but a slight descensus, the operation for shortening the round ligaments suffices, the operation having been a success, and the suspension of the uterus is permanent. In nineteen of the twenty-three cases presented the operation was successful. When the perinæum is destroyed or greatly relaxed, and when the uterus is more or less completely prolapsed, it is wise to supplement the Alexander operation by narrowing the vagina and restoring the perinæum. Indications for combined operations exist in many instances; but six of the twenty-one cases reported were those in which only Alexander's operation was performed.

In concluding, Dr. Mundé said that, in properly selected cases, Alexander's operation usually does what is expected of it, and that if proper antisepsis is employed, the danger of the operation is practically *nil*. He believes that Alexander's operation will not be supplanted by the at-present-fashionable, but much more dangerous, laparotomy.

AMERICAN PUBLIC HEALTH ASSOCIATION.

SIXTEENTH ANNUAL MEETING.

MILWAUKEE, WISCONSIN, Nov. 20, 1888.

THE meeting of the American Public Health Association just closed will long be remembered by the members of the Association as one of the best since its organization in 1872. A week of almost cloudless skies, a series of papers and discussions of unusual interest, and a hospitable welcome, conspired to make every day's session a success.

The first morning session was devoted mainly to the subject of water pollution, the opening paper being the report of the committee on the pollution of water-supplies. It was read by the Chairman of the Committee, DR. CHARLES SMART, United States army. The object aimed at in the report was the necessity of excluding sewage from admission to water-supplies *in toto*. The report treated of all the important questions which pertain to this subject, such as the value of chemical and biological analysis as aids to examination, the effect of filtration and of sedimentation as carried out in connection with the water-supplies of different cities, both domestic and foreign, and the effect of polluted water-supplies upon the mortality rate, especially from typhoid fever. The following portion of the report had reference to the legislation of Massachusetts on this question, and to the work accomplished by its State Board of Health.

The State Board of Health of Massachusetts is charged with the general supervision of the water-supplies. No sewage, drainage, excrement, or other refuse or polluting matter, of such kind or amount as, either by itself or in connection with other matter, will corrupt or impair the purity of a water used for domestic purposes, is permitted to be delivered into a water-course or any of its feeders within twenty miles above the point where a water-supply is taken. Upon the application of a city or

town to the Supreme Court, alleging the pollution of its water-supply in violation of law, an injunction may be granted or the polluting substances required to be so cleaned or purified that they shall no longer be deleterious. The limit of twenty miles in this law is a defect; but sanitary legislation is a thing of slow progress, and our friends in Massachusetts undoubtedly secured as much as was possible for them to obtain at the time. The State Board of Health is required to examine the waters from time to time for the purpose of ascertaining whether they are adapted for use as domestic water-supplies or are likely to impair the interests or imperil the health of the public. It is required to conduct experiments to determine the best practicable methods of purification, of drainage, and of the disposal of refuse, and to recommend measures for the preservation of the purity of the waters. Moreover, it is the legally constituted adviser of cities, towns, corporations, firms, or individuals in matters pertaining to the introduction of water-supplies or sewerage systems, making use of its knowledge and facilities on their behalf in regard to source and quality of water and methods of sewage disposal, having regard to the present and prospective needs and interests of other communities or individuals that might be affected thereby. The approval of the board is a legal requirement to the consideration by the legislature of any application for authority to introduce any system of water-supply or sewerage. The board is also empowered to consult with and advise those engaged or intending to engage in any manufacturing or other business as to the best practicable method of intercepting, purifying, or disposing of any drainage or refuse that might result from the business to the detriment of the waters of the State. It is required to bring to the notice of the attorney-general all instances which may come to its knowledge of omission to comply with existing laws respecting the pollution of water-supplies and inland waters, and to report to the legislature any specific cases, not covered by the provisions of existing laws, which in its opinion call for further legislation. Finally, and very materially, the board is provided with funds to sustain the corps of engineers, chemists, and inspectors whose labors are needful to the proper performance of its duties.

The report of the board's proceedings under these heads, submitted to the legislature in January of this year, shows the excellent work that may be accomplished in this way. Eleven applications from cities and towns for advice concerning water-supplies were received; eleven for advice concerning sewerage; two soliciting action to prevent the contamination of particular water-supplies; and one from a manufacturer for advice concerning the disposal of drainage from certain works which he purposed establishing. The important question of a water-supply for the cities of Boston, Chelsea, and Somerville and the town of Everett, was one of those that came before the Board. There are one hundred and twenty-three sources of public water-supply in the State; but over two hundred samples are investigated chemically and biologically every month, the samples being from rivers, ponds, and other sources that may be utilized in the future. Experiments are also in progress on methods of sewage disposal which will add considerably to our knowledge of the results which may be obtained in that direction.

With the aid of the State the local authorities, in their efforts to obtain and preserve a wholesome water-supply, would experience no difficulty that could not be overcome by the expenditure of the necessary funds. The twenty-mile limit will in progress of time be blotted out, and the waters of the State be sharply divided into those which may be used as sources of domestic supply and those which carry off the waste water. The water-supply and sewerage systems of the State, of the country, should be as distinct as those of every household; and the sooner this is accomplished the sooner will the rates of sickness and death be decreased among our people.

Your committee, therefore, urge a livelier interest in this important matter on the part of the State boards of health, an interest which is not satisfied with discussing and subscribing to sanitary views of the subject, but which will leave nothing undone that will tend to invest them with power to act for the preservation of the public health. With all our boards operating, each within its domain, there would be no need of a committee of this Association to investigate the subject of water-pollution. In concluding we submit the following resolution: —

"That it is the well-considered belief of this Association that it is an imperative necessity, especially in the more populous States, that State legislatures should give their boards of health that financial support which would enable them to act intelligently on all questions pertaining to the public water-supplies, investing them at the same time with the supervision of the said supplies, and with power to preserve them from contamination by sewage or other injurious matters." This resolution was referred to the Executive Committee and afterwards passed by the Association.

DR. H. P. WALCOTT, Chairman of the State board of health of Massachusetts, being called upon, referred to the necessity of condemning certain densely populated districts near great cities for use as water-supplies, and also to the importance of carefully watching all cases of typhoid fever, and guarding against all possible infection of the water-supplies by them.

DR. RAUCH, of Illinois, gave a sketch of the work accomplished by the board of health of that State, in its investigation of the great rivers of Illinois, with special reference to the effect of sewage upon them.

The evening session was devoted to the customary addresses of welcome by the city authorities and the delivery of the President's address. It would be difficult to assign a definite title to Dr. Hewitt's excellent address, since it included nearly the whole domain of sanitary science. Water-supply, sewerage, and sewage disposal, infectious diseases, vital statistics, ventilation disinfection, all received their due share of attention. Special stress was laid upon the importance of local boards of health, and it was urged that the local board is the integral unit, the State and national boards being secondary in actual or practical importance. With reference to a national board of health, Dr. Hewitt believed

that its functions should consist mainly in facilitating and cementing the interdependent helpfulness of State boards with each other; and secondly, in providing for a thorough extra-national system of sanitary inspection in connection with our consular system. Although an hour and a half in its delivery, the address was listened to with the keenest interest to its close.

SECOND DAY, NOVEMBER 21ST.

The first paper of the second morning's session was presented by DR. BENJAMIN LEE, of Philadelphia, secretary of the State board of health of Pennsylvania (and read in his absence by Dr. Rohè of Baltimore). It was entitled

MEMORANDA OF VISITS TO THE QUARANTINE STATIONS OF THE ATLANTIC COAST DURING THE SUMMER OF 1888.

Special reference was made in this paper to the condition of the quarantine stations at New York, Philadelphia, Baltimore, Wilmington, and Norfolk. All of these were severely criticized, especially in view of the fact that large sums of money had been expended upon them to no purpose, the methods employed being entirely inadequate to provide for the exclusion of infectious disease.

The second paper was read by DR. CROSBY GRAY, health officer of Pittsburg, the burden of which was to the effect that the water-supply of a section of that city was polluted by sewage, and as a reasonable consequence the mortality of that section of the city was 6 per cent. higher than that of the remaining sections. Dr. Gray presented a calculation of the loss which ensued to the city from a purely financial standpoint, estimating it at about a half million dollars, and this without making allowance for professional services.

DR. H. B. BAKER, secretary of the State board of health of Michigan read a brief paper upon

CLASSIFICATION OF DISEASES,

to the effect that classification in medicine, like all other sciences, is one of its most important branches, no progress being possible without it. The statistician must necessarily attach due weight to the causes of disease in any system of classification which he may adopt, and the discoveries of the bacteriologist, the meteorologist, and of the etiologist must all be allowed due credit in the adoption of a system of nomenclature. Dr. Baker prefers the system proposed by Dr. Farr, at the same time believing that to meteorology, and especially to the influence of hot or cold weather, should be accorded more value than is ordinarily granted.

In consequence of the recent invasion of the United States by yellow fever a large share of the meetings of this session of the Association was devoted to the discussion of yellow fever, and of the measures for its prevention. The discussion of this subject proved to be very profitable, since some of the most valuable contributions presented were in this direction. They were eminently practical in character, emanating as they did from personal experience, both in the matter of management and of prevention by quarantine.

DR. JOHN H. RAUCH, secretary of the State board of health of Illinois, presented a paper entitled

YELLOW FEVER: PANICS AND USELESS QUARANTINES; ITS LIMITATION BY TEMPERATURE.

The object of Dr. Rauch's paper was to show that yellow fever does not spread in regions where the temperature is below 70° as a rule. Hence the needless fear that often exists in the later part of the year in many communities where the temperature does not remain above 70° for a considerable period of time. Dr. Rauch personally visited southern Illinois, as well as other places outside of the State, and boldly proclaimed the uselessness of quarantine, urging that refugees from Florida should not be barred from admission to the States, and exerting a salutary influence in restoring confidence and preventing panic.

Recent Literature.

The Life Insurance Examiner: A Practical Treatise upon Medical Examination for Life Insurance. By Charles F. Stillman. The Spectator Company, New York.

This is a book of over two hundred pages, written by a medical examiner of one of the largest and oldest of the American life insurance companies. It presumably embodies the experience of this company, extending over a period of over forty years, and at the same time includes that of the other large companies. The author has evidently had a good deal of experience in making life insurance examinations, and his method of handling the subject suggests one who is at the same time familiar with ordinary medical teaching. The fact that the book is dedicated to the president of a large company, and that it is printed and published by the Spectator Company, which has to do with insurance publications solely, would indicate that it was intended to be a standard authority on its subject. It certainly has attained the aim of its author to present a concise practical manual. The subject is treated under three heads:

1. Life Insurance Formalities.
2. Examination of the Applicant.
3. Diseases relating to Life Insurance.

In the first part of the book is a list of questions classified from the forms of application used by six prominent insurance companies, covering six pages. Next come nine pages of instructions to medical examiners, revised from the rules observed by the prominent companies, and in the midst of these instructions there is a colored perforated sectional plate giving the relation of the deeper parts to the ribs and surface of the body. It is the well-known plate of Ferber, and is a most excellent one.

The second part of the book is abundantly supplied with tables and text, covering seventy-five pages, and illustrated by woodcuts wherever necessary. Beginning with the signature of the applicant, everything relating to him is systematically and thoroughly treated of, and the methods of examining the different parts of the body are given with great clearness. Chief attention is paid to the thoracic viscera and the kidneys, as is natural.

Finally, about one hundred pages is devoted to the consideration of diseases. Beginning with

hereditary influences, which the examiner must be able to detect by comparing the family record with the previous history and present physical condition of the applicant, the constitutional diseases and diseases of the blood and blood-making organs are briefly considered, solely with reference to their bearing upon the rejection, postponement, or acceptance of the applicant for insurance. The high standard adopted in the other parts of the book is fully maintained here, and the author has succeeded in bringing in all that is essential and at the same time has kept his hold on the interest of the reader. The book, though not without some small faults, is by far the best that has thus far appeared in English, and deserves a wide adoption by medical examiners.

A word of praise should be given to the publishers. They have presented a book remarkably free from typographical errors, printed on nice paper, with clear, apparently new type of a very nice size.

It is to be hoped that the book will meet with the success that it deserves.

The Dispensatory of the United States of America. By DR. GEO. B. WOOD and DR. FRANKLIN BACHE. Sixteenth edition, rearranged, thoroughly revised, and largely rewritten, with illustrations, by H. C. WOOD, M.D., Professor of Materia Medica, etc., University of Penn.; JOSEPH P. REMINGTON, Ph.M., Professor Pharmacy, Philadelphia College of Pharmacy; SAM. P. SADTLER, Ph.D., Professor Chemistry, Philadelphia College of Pharmacy, and University of Penn. J. B. LIPPINCOTT Co., Philadelphia. 1888. xiv. 2091. 8vo.

The appearance of the sixteenth edition of this, the oldest and most generally known commentary upon the U. S. Pharmacopœia, is of great interest to the medical profession. So much more generally known, in short, to physicians has this commentary become than the text itself, that it is commonly supposed, by all such as are not specially informed upon the subject, to be, in fact, the very U. S. Pharmacopœia itself.

The extraordinary activity during recent years in practical and theoretic research in all departments of medicine and pharmacy has produced an unusually large amount of fresh material to be incorporated into this new revision. Although over six hundred pages of new matter have been, therefore, included, yet, by a very thorough elision of that which was effete, the book has been increased in size by only some hundred and sixty-seven pages. It has thus not been rendered too unwieldy for the needs of practical workers. To still further enhance the value of the information given, full and accessible references, with dates, have been appended to aid in the search for fuller details.

Recognizing the large use made now of certain pharmaceutical preparations, which have not as yet received official sanction, and desiring to aid in the organized effort now being made to furnish uniform and authoritative formulas for such, the editors have incorporated the new National Formulary in its entirety, thus rendering it of easy reference for physicians, who would find it greatly to their advantage to consult this part of the work.

The very great merits of the work as a whole, in its former editions, have become too well known to call for any further mention now. And this edition has made due advances upon the past.

B. F. D.

Physicians' and Students' Ready Reference Series. Obstetric Synopsis. By JOHN S. STEWART, M.D. 12mo., pp. 202. Philadelphia: F. A. Davis, 1888.

This synopsis is based on the lecture notes of Prof. W. S. Stewart, of the Medico-Chirurgical College, Philadelphia, although all the leading works on the subject have been consulted. The new obstetric nomenclature adopted at the Ninth International Medical Congress, in 1887, has not been followed in the text, but is inserted in the form of an appendix.

The teachings in the main are those of approved modern writers; but we regret to see the author retain the theory of an autogenetic origin of puerperal fever.

Our opinion of such books as the subject of this notice has been previously stated, and needs not to be repeated. While synopses and other shortcuts may be appropriate in young ladies' schools, when a general smattering is all that is desired or expected, we do not think their use is admirable by the serious-minded medical student. We are aware that the compilers of such books recommend them only as stepping-stones to larger works; but unfortunately the average student will not make use of the latter if he finds that he can pass an examination without them. The result is apparent when he faces the difficulties of professional life.

Hygiène Israélite. Translated from Arabac into French. By M. CARCOUSSE. Algiers: M. Ruff. 1887.

Was it not Jean Paul (Friedrich Richter) who said that the literary masterpieces of the past should be republished once in the lifetime of every generation, or at least once in each century. But many a year has passed since the reading world has enjoyed the sanitary and philosophic treatise by Maimonides (born 1139). A subtitle of this portion of the author's writings reads "Principles of the Physical and Moral Well-being of Man." In this *brochure*, comprising about fifty pages, human life is looked upon from two points of view: (1) with regard to the physical care of the body; (2) considering the conduct of the individual as a member of society — moral hygiene. Here is presented an epitome of the wisdom collected in the Hebrew Bible, while the inculcations anent physiology, and hints at the rationale of things, I show this thinker to have had no difficulty in reconciling science and religion. This volume may well be placed on the same shelf with *The Thoughts of Aurelius* and *Religio Medici*. The memory of the erudite translator is honored by the few lines with which Dr. E. L. Bertherand precedes the work of his friend.

Although of special interest to the inhabitants of North Africa, where the author lived and observed these canons of corporeal and spiritual health, may be studied with satisfaction by the beginner and by the sage of every land. F. B. S.

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Medical and Surgical Journal.

THURSDAY, DECEMBER 6, 1888.

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THE REGISTRATION OF MORTALITY AND VITAL STATISTICS.

STATISTICAL research is already recognized as an important branch of medical study, with the ultimate object of furnishing, in prognosis and treatment, a trustworthy guide derived from the records of experience. It is true we have no records (except imperfect ones for the State of Michigan) of the actual amount of sickness in communities or States, and more than probable that death-rates do not always fairly represent the public health; yet, at the same time, records of births and deaths are of great sanitary value, when they are sufficiently complete to allow certain definite comparisons to be made between the healthfulness of different localities, ages, and nationalities, and to "indicate those circumstances of the environment which tend to produce disease, and which, at the same time, can be modified by human effort." Even though these data were accurate and complete, it is by no means easy to make comparisons which shall not be misleading, while with the well-known shortcomings of public registration records the task becomes so complex that our inductions must be regarded more as probabilities than established conclusions. This view of the subject is not always clearly kept in mind, even by statisticians.

Dr. W. Everett Smith, in a study of "Phthisis and Pneumonia in Massachusetts, Statistical and Climatological," read before the Massachusetts Medical Society last June, has so clearly analyzed and so sharply arraigned the laxity and inaccuracy of city and State registration reports, that a further discussion of the subject seems to be profitable.

Year after year, official tabulations have been made by State authorities of the distribution of some of the more prominent diseases among the sexes and different age-periods, taking the total number of deaths from the diseases as the basis of calculation, and omitting entirely from the problem the living population among whom these deaths occurred. Whatever reason there may originally have been supposed to be for such an imperfect and misleading tabulation as is this "method of percentages," the system is so obviously "faulty" that we are surprised it has so long lingered among routine traditions.

Even so high an authority as the late Dr. Austin Flint is shown to have followed this percentage method of calculating the age predisposition of phthisis and pneumonia, although a study of the percentage tables of deaths "from all causes," is sufficient to prove such calculations essentially mendacious, since, according to their testimony, the liability to death, from all causes combined, rapidly diminishes after the age of thirty.

The method which Dr. Smith recommends of calculating the distribution of a given disease, not only in the sexes and age-periods, but also in separated localities, such for example, as towns cities, and States, by comparing the *mortality* with the *living* population *among* whom the deaths occurred is clearly the method employed by life insurance companies, by the reports of the Registrar-General of Great Britain, and by Dr. J. S. Billings in the Tenth Census of the United States. We sincerely trust it will sometime be adopted in the State Registration Reports.

The discrepancies presented between the Registrar's Report and the Reports of the Board of Health of the City of Boston prove still more interesting, and much more important. Not only does the City Registrar present to us "a confusing and mischievous tabulation of disproportions" in his calculation of the mortality among the different nationalities resident within the city, inasmuch as he calculates "the percentage of deaths by nationalities, not according to the *population* by nationality, but according to the *total number of deaths from all causes in the given nationalities*," (the same error we have already noted in the State records,) but he leaves us at the same time "in doubt regarding the total number of deaths in any given disease, since the figures of the Registrar confessedly do not correspond with those of the Board of Health; yet they work, or are supposed to work, with precisely the same data." Furthermore, "the City Registrar discontinued any practical study of consumption about 1878, because, as he says, the disease was already so well understood, while he has never tabulated the mortality from pneumonia

by nationality;" . . . "neither is it possible, without a personal and expensive study of the written records at the City Hall, to gain any idea of the local or ward distribution of these diseases (consumption and pneumonia) in the city."

Although these results are in themselves sufficiently "surprising, disappointing, and vexatious," they are all the more reprehensible when we consider that the Board of Health has for several years recognized to the full the inaccuracies and deficiencies of the Registrar's office, and yet, for various reasons, is powerless to render the records more trustworthy.

The questions naturally arise, are the faults we have noted a necessary or integral part of a system of registration? If they are not, what are the practical remedies that will infuse life and usefulness into what is now a *comparatively* dead and inert mass of figures?

The returns of mortality are derived, it must be remembered, not alone from competent medical men, but from all the rabble who choose to call themselves physicians, as well as, at times, from attendants confessedly non-medical; but how many returns are thus made we do not know, since in no case can we ascertain by the public records the names of the reporting physicians or attendants.

The simplest and at the same time most thorough way of improving the general value of the records would obviously be to provide some means of registering all competent practitioners of medicine, and of limiting to them the authority to sign death certificates. In lieu of such a salutary provision, it would be a very easy matter for town and city clerks to give, in their annual reports to the Secretary of the Commonwealth, the name of the attendant who signed the death certificate. This, however, would improve only the registration records, but would render the annual registration reports no more trustworthy than before. Yet it would be a step toward accuracy of detail, and would materially lighten the labors of those who choose to make an individual study of the original statistics.

Another point of confusion in the registration records arises from a general neglect of the nosology, or classification of diseases adopted by the State. Although we grant that the classification which is now in use, that of Dr. Farr, is so unsuited to our present advance in the knowledge of the nature of disease as to demand an entire revision, yet we hold that it should be the duty of local boards of health, city registrars, or town clerks to secure as far as possible death returns made in accordance with reasonable ideas of medical information, — death returns which shall mean something.

Of what possible value to science can it be, for example, to preserve the record of a death from "congestion," or "hæmorrhage," or "inflammation," or "affection of the bowels," when it lies within the power, and should be within the care of every clerk to insist upon a more explicit diagnosis before the burial permit shall be issued? It is true that even if additional accuracy were demanded, many officials would continue to perform only a perfunctory service in the matter, and would rarely, if ever, trouble themselves to insist upon minute details, in view especially of the fact that laxity has been the accepted tradition so long as to gain the force of unwritten law, while, it must be confessed, the great majority of town clerks and registrars being non-medical men, are far from competent to obtain any scientific accuracy whatever.

On the other hand, it is not to be supposed that a man who himself has no definite ideas of diagnosis or of even the rudiments of a common-school education can ever by any amount of badgering be made to render an intelligible return of a cause of death. At the same time the present neglect of even the simplest requirements in diagnosis is more than reprehensible, and we cannot avoid the conclusion that public service would be greatly improved if, so far as possible, the local officials in charge of mortality returns were men of medical education. Indeed, it is more than probable that many of the errors we have noted in the Reports of the Boston City Registrar would never have occurred had that official possessed the requirements which we here recommend, and which other large cities have seen the importance of demanding in their registration service.

Closely connected with the classification of disease, and often helping materially to explain a particularly obscure diagnosis, is the duration of the last sickness, a datum already supplied to the town clerks, but not transmitted by them to the State records as it ought to be, to complete the clinical history of the case.

The only other source of error in registration work which we shall mention here depends not so intimately upon the data themselves, which are at our disposal, as upon the faulty interpretation we are apt to give to them and the unfair use we too often make of them. In comparing, for example, the aggregate death-rates of any given year or decade with those of a preceding year or decade derived from registration records, we often find these rates to be apparently increasing. Thus the National Census of 1860 gave a general death-rate from all causes for the States and Territories of

12.54, the census of 1870, a rate of 12.77, while that of 1880 gave a rate of 15.09 per 1000 living population. To overlook the fact, however, that year by year and decade by decade greater efforts have been made and greater success achieved in obtaining full and accurate returns of mortality and vital statistics; to adduce a full comparison between rates of death which a moment's reflection would show to be of such varying degrees of accuracy; and finally to attempt positive inferences from such comparisons, would, we believe, be as hasty a conclusion as it is to claim that an apparent increase in the mortality of any individual disease, pneumonia, for example, is due solely, or even in greater part, to an assumed inefficiency of modern methods of treatment, a point to which we have already made reference in these columns.

SEEGEN ON THE FORMS OF DIABETES MELLITUS.

PROFESSOR SEEGEN, of Vienna, who is widely known in connection with his studies of saccharine diabetes, and especially for his contributions to the dietetics of this disease, in a recent lecture before the Medical College of Vienna, distinguishes two forms of diabetes: the one light, in which sugar is eliminated by the urine only when the patient ingests starchy foods; the other grave, in which sugar is found in the urine even when the patient abstains altogether from amylaceous articles of diet. There is, of course, nothing new in this classification, which is substantially adopted by all modern authorities, although some, as Senator, regard these two forms as two periods of the same disease, a view at which Seegen demurs.

The grave form almost always attacks young and middle-aged persons, while the mild form is generally met with in advanced life. From the standpoint of prognosis these forms should be well distinguished.

Seegen gives a table in which are recorded the ages at which diabetes presented itself in eight hundred cases:

In 5 per cent.	between	the	ages	of	1 and 10 years.
" 3	"	"	"	"	10 and 20 "
" 16	"	"	"	"	20 and 30 "
" 24	"	"	"	"	30 and 40 "
" 30	"	"	"	"	50 and 60 "
" 10	"	"	"	"	60 and 70 "

As concerns sex, Seegen has met with the disease much oftener in men than in women, the proportion being as 7 to 3. Diabetes, in his experience, as in that of most clinical observers, is very frequent among the Jews. Seegen thinks that the greater frequency of diabetes among the Jews than among the people of other nations is owing to the excessive trials, hardships, and sufferings which this race has been compelled to endure in past ages, for the Jew belongs to a persecuted race; the sufferings of the parent have engendered in the child a predisposition to nervous diseases, and diabetes is known to be intimately linked to diseases of the nervous system.

The duration of the grave form is generally from four to five years. In exceptional cases, diabetes presents itself in an acute manner, and terminates fatally in four or five weeks. The mild form lasts from ten to twenty-five years.

Diabetes is very often a family disease; it has been traced in some instances through four generations. It sometimes alternates with mental diseases, as melancholia. In the great majority of cases (ninety per cent.) the nervous system is in an abnormal condition; — the diabetes is often accompanied with neuralgia and neurasthenia.

In order to make a successful prognosis, it is necessary for the physician to know with which of the two forms he has to do. For this purpose he must examine the urine, prescribe an exclusively animal diet for two days, then examine the urine anew. If, in making the second analysis, no sugar is found, the disease is of the mild kind; if, however, at the end of the two days, traces of sugar appear, the disease is more serious.

Small quantities of sugar may coincide with grave symptoms. In these cases, the elimination of sugar is not the principal disease, but a symptom of a nervous disease, very generally neurasthenia.

As for the treatment, there is no sovereign remedy for diabetes. Morphine and codeia act only while they are being administered. In grave cases the alkaline waters and animal diet have no value; but in the mild form the alkaline waters (Vichy, Carlsbad, etc.) have a considerable action on the elimination of sugar, and, what is remarkable, this beneficial action lasts for some time after the administration of the waters.

As far as a definite cure is concerned, Seegen has never observed it in the eight hundred cases above mentioned. By a definite cure; he means a state which enables the patient to eat as freely of amylaceous matters as other people without passing sugar in his urine. Cantani affirms that he has observed several cases of complete cure, but if one studies these cases closely, one finds that none of these patients returned to his former habits of diet. Cantani prescribes an absolute animal diet for from three to six months, after which he regards his patients as cured. Seegen has tried this mode of treatment without any result. He has, moreover, seen two of Cantani's pretended cures; these patients came later to Carlsbad with all the symptoms of diabetes.

To explain the presence of sugar in the urine,

Claude Bernard assumed an exaggerated production of this substance in the economy. The limit which this glycæmia may attain without giving rise to diabetes is, according to Bernard, .02 per cent. This figure Seegen thinks too high, for he affirms that he has seen cases of diabetes without glycæmia. According to this writer, in the mild form the patient eliminates sugar which has been introduced by the food, the hepatic cells having lost the property of acting on amylaceous substances.

In the grave form the patient eliminates sugar even if he has not eaten amylaceous matters, because the combustion of sugar does not take place. By numerous experiments Seegen has found that narcotics diminish in animals the combustion of sugar In these cases, then, it is not a single organ which is affected, but all the cells of the body, for the combustion of sugar takes place in all the tissues of the economy.

This theory accords well with clinical facts, for the mild form, which is a disease of the liver, is susceptible of great amelioration, while the grave form, which is a disease of the entire organism, is well nigh, if not altogether, incurable.

YELLOW FEVER ON THE CRUISER BOSTON.

The new United States steel cruiser Boston recently arrived at the port of New York from Hayti with yellow fever on board. The first case occurred November 9th, when the steamer was lying off Port au Prince, whither she had come from South America; and by the time she started for New York, November 16th, two other cases had developed, one of the victims being chief surgeon Wm J. Simon. During the voyage five other cases developed, and four of the patients died. When the vessel arrived at the New York quarantine, November 24th, Dr. Simon and two seamen were in a critical state, but the two seamen afterwards recovered. Dr. Simon lingered until November 27th, when he died, and it is said that in his case the presence of Bright's disease rendered the chances of his surviving the attack very small.

As soon as the weather permitted the convalescents were removed to the hospital on Swinburne Island, and no new cases have occurred.

During the voyage there was naturally something of a panic on board, and the duties of the assistant surgeon, Dr. Lumsden, were extremely arduous.

On December 3rd the Boston was released from quarantine, and proceeded to the Brooklyn Navy Yard, after disinfection, which, as far as we have learned, consisted of scouring the wood-work and exposing the compartments to the fumes of sulphur. The Boston is essentially an iron vessel, and her future history, should she return to tropical climates, will be watched with interest. Previous experiences with wooden ships have not been encouraging.

MEDICAL NOTES.

—Washington despatches state that a petition was sent recently to Secretary Whitney, signed by fourteen of the practising physicians of Pensacola, which complained against Surgeon J. W. Ross, attached to the Pensacola Navy Yard. The petition charged that Surgeon Ross was guilty of unprofessional and un-officer-like conduct; that although he was receiving a large salary from the Government, and was living in quarters furnished by the Government, he was actively engaged in prescribing for numerous civilian patients at the Government dispensary, where he had the free use of medicines and instruments, and that he assisted other patients at Government expense and accepted less than the schedule rate of fees charged by his professional brethren, thus diminishing their practice and revenue therefrom. The petition was referred to Surgeon Ross, who, while denying the right of the petitioners to meddle with his affairs, admitted that he treated and prescribed for patients from distant points, took fees from those who were able to pay, and gave his services and medicine free to those unable to pay, especially to those on the Naval Reservation. He denied the allegations that he used Government time, appliances, or medicines for those not entitled to them, and upon the testimony of others that Surgeon Ross had simply given his services out of sympathy for the poor, and had done much good, the Secretary refused to interfere.

—Milwaukee, Wis., has an emergency hospital, which has been in operation four months, and during that period over sixty cases have been treated, or an average of one every other day, all of which were real "emergency" cases, where the patient would have been placed in danger if taken to some more distant place for treatment. The hospital has no permanent fund for its support, and is not maintained by the city. A few gentlemen who have perceived the need of the hospital have provided for its expenses, and several well-known physicians have given their services free of charge. The president of the board of trustees says that the experience of the past four months has shown that it will cost, in ordinary times, about $2000 per year to run the Emergency Hospital, that is, barring any great accidents, railroad or otherwise. If such should occur the expense would necessarily increase.

— Marshall P. Wilder tells this story of a doctor and his patient. The patient wore an un-

happy look. "There is nothing particularly the matter with me," he said, "except that I am all out of sorts. I feel shaky all day long, and somehow I can't get in trim." "Of course not," said the doctor oracularly. "You eat too much, sleep too much, drink too much, and smoke too much. You should eat but two meals a day, drink nothing but red wines, and smoke one big cigar only after dinner." A month passed, and the doctor met the patient again. The marks of misery and gloom were upon the face of the patient. "I am about ten thousand per cent. worse," he said. "The eating was all right and the drinking was all right, but smoking that one cigar a day nearly killed me." "How so?" asked the doctor. "I never smoked before in my life."

— Cable despatches state, under date of November 29th, that at a council meeting of the British Medical Society a resolution was passed deprecating the publication of the details of the late Emperor Frederick's sickness, as a violation of professional confidence. The council accepted the regrets of the editor of the society's organ concerning the publication of them. As a possible corollary of the above action, we learn that Sir Morell Mackenzie has resigned his membership in the College of Physicians.

— The daily press contains the startling report that the Chinese lepers in British Columbia have communicated their terrible malady to the Indians, who in that province number fifty thousand. Senator McInnes, M.D., from British Columbia, is said to have stated that out of the total Indian population of the province, which he places at forty thousand, he believes there will not be five thousand living in a quarter of a century, as a result of the leprosy.

— The first prize offered last winter by the Medico-Legal Society of New York for the best essay on a medico-legal subject has been awarded to Mr. J. H. Wigmore, of Cambridge, Mass., the subject of whose article was "Circumstantial Evidence in Poisoning Cases." Among the members of the awarding committee were ex-Judge Dillon and ex-Judge Noah Davis. Mr. Wigmore has been invited by the president of the society to read his paper at the December meeting.

— The supposed remedial agency of the odor of cows and cow-stables in cases of consumption is to be tried at Reinickendorf, near Berlin, on a unique scale, says the *New York Analyst*. A vast circular building has been erected, in the basement of which several hundred cows will be kept, and the odor of the stables will be conducted to the rooms in the upper stories! In the centre of the building is a large yard, for which a whey-cure, bathing rooms, etc., are planned.

— The St. Paul, Minnesota, *Press* says that physicians estimate that a hundred thousand Minneapolitans suffered from the winter cholera last winter. These hundred thousand people who have been through the mill are wondering, with feelings of horror, whether they are going to suffer again in the same way. A few cases have already appeared, or, at least, cases which are reported to be winter cholera. The water-supply is said to be at fault.

NEW YORK.

— The American Association for the Advancement of Physical Education held its fourth annual meeting at the Berkeley Lyceum, November 30th. Mr. William Blakie presided, and a number of delegates were present from various parts of the country. Among the papers read were the following: "The Training of Dullards," by Dr. H. D. Wey, of the New York State Reformatory at Elmira; "The use of the Sphygmograph in the Physical examination of Gymnastic Work," by Dr. J. G. Smith, of New York; "Some Fallacies in Anthropometry," by Dr. Edward Hitchcock, of Amherst College; "Physical Training of Women," by Dr. Mary T. Bissell, of New York; and "The New Athletics," by Dr. John S. White, president of the Berkeley Lyceum. The latter gentleman strongly advocated the advantages of the game of football, which he characterized as the noblest of all out-door sports. Dr. Sargent, of Harvard, was obliged to omit his address on "The Physical Test of Man," on account of illness. The following officers were elected: President, Wm. Blakie; Vice-Presidents, Dr. D. A. Sargent, H. M. Starkoff, and C. C. Todd; Secretary, Dr. W. G. Anderson; Treasurer, Dr. E. P. Thwing.

— The Gouverneur Hospital, one of the smaller city hospitals, has been closed by order of the Commissioners of Charities and Correction, and the patients removed to Bellevue in order to permit a thorough disinfection and fumigation of the building; though the house-staff will remain on duty to attend to out-patients and to ambulance calls. Dr. Chalmers, the ambulance surgeon, contracted diphtheria some weeks ago from a dispensary patient, and since that time other cases of the disease have developed in the hospital. The attack of diphtheria was followed by pneumonia and endocarditis in the case of Dr. Chalmers, and little hope is entertained of his recovery. There is a proposition under discussion by the commissioners to abandon the old building entirely, and erect a new reception hospital in the neighborhood.

— The fifth annual Medical Students' Missionary Conference was held at Association Hall, on Sunday, November 25th. Dr. D. B. St. John Roosa presided, and made the opening address. Among the other addresses was one by Dr. B. C. Atterbury, of Pekin, who gave an interesting account of the work done by the medical missionary in China. In the course of it he said that one of the annoyances met with was that the Chinaman was not satisfied with moderate treatment. He thought that if a small dose would cure a little of his pain, a big dose would entirely eradicate it. Dr. Atterbury first found this fact out by learning of a patient who had made up powders that had been given him from time to time, and taken them all at once, with a nearly fatal result.

— Dr. Maximilian J. Reinfelder, consulting physician to St. John's Riverside Hospital, at Yonkers, died November 30th, of disease of the heart. His father was a surgeon in the Military Academy of Munich, and he was born in that city March 4, 1821. He was graduated from the university of Munich in 1844. In 1854 he came to the United States, and some time afterwards received a degree from the medical department of the University of the City of New York. He was a fellow of the New York Academy of Medicine and a member of the Westchester County Medical Society.

— The State Board of Health has applied, through its legal representative, to Judge Cullin, in a special term of the Supreme Court in Long Island City for a mandamus to compel an organization of a health board in that city. It seems that since the present mayor, Mr. Gliam, assumed office, Long Island City has been without one, the mayor and the board of aldermen being at loggerheads, and the latter refusing in every instance to confirm the appointments made by the mayor for health commissioners.

— Of late a number of physicians in Brooklyn have been swindled by a man whose plan of operations is to call during the absence of the physician, and, presenting a bogus check for $35 in payment of an imaginary bill for professional services amounting to $20, received $15 in change from some member of the family. At last accounts the swindler was still at large.

Miscellany.

FEW DRUGS IN TREATING THE AGED.

The *Maryland Medical Journal* has a word of caution regarding the use of drugs in old people — say those over sixty years of age.

In the treatment of this class of persons it is in many cases advisable, after the acute symptoms have disappeared, to stop all drugs, except, perhaps, alcoholic stimulants, and such innocent remedies as pepsin, and to trust to time and diet for the clearing away of remaining symptoms. This is especially necessary when disorder of the stomach is present.

To illustrate: A woman, eighty years of age, suffers from a very slight evening fever, said to be somewhat worse every other day; she is treated with moderate doses of quinine, under which the appetite begins to fail while the feverishness continues; she is then treated simply by diet, rest, and perhaps small doses of pepsin, and contrary to all expectations she in time regains her health. A patient of seventy years is taken with a cough and slight fever, calls in a young doctor, who treats the cough with expectorants — minute doses of ipecac, etc.— and the fever with quinine; she becomes more and more ill; an old hand takes charge, stops all treatment save a very mild sleeping-draught at night, and the patient at once shows improvement in appetite, although the cough and fever persist for a time, and with gentle tonics regains gradually her wonted vigor.

OBITUARY.

THE LATE DR. R. K. JONES.

At the annual meeting of the Penobscot Medical Association, Dr. W. C. Mason read the following obituary of the late Dr. R. K. Jones, of Bangor: —

Dr. Jones was born at Stockbridge, Mass., July 13, 1823. He prepared for an academic education at the schools in that place, but, after being admitted to Williams College, decided not to join his class, but to commence at once the study of medicine. He received private medical instruction from Dr. Lucius S. Adams of Stockbridge, and from the distinguished and now venerable Prof. Henry I. Bowditch, of Boston. He attended lectures at the Medical College at Pittsfield, Mass., and then entered the Medical Department of Harvard University, from which latter institution he received his degree in 1847. During the year next following he was at the Massachusetts General Hospital, as medical house officer, one of his colleagues being John C. Dalton, of New York, the celebrated physiologist. After having performed his hospital service, Dr. Jones practised first at West Needham, and then at Martha's Vineyard, where, in 1853, he married Miss Octavia Yale Norris, by whom he had six children, four of whom are now living. Of these, he educated two at Harvard University, and one at the Maine State College, the youngest now being a student at the Boston Latin School. In 1857 he removed to Bangor, where he filled the office of city physician in 1862, 1863, and 1866, and that of United States examining surgeon of pensioners from 1863 until 1885. He was a member of the Massachusetts Medical Society, the Maine Medical Association, and also of that association at the annual meeting of which we are now gathered. Dr. Jones joined this society in 1859, and until his death was one of its most valued and active members. He was president of the association in 1867 and 1874. He held the various offices connected with his profession here acceptably and creditably; and those of us who best knew him as a member of this society and as an associate physician will never forget that in him we found a zealous promoter of the cause of medical science, an earnest upholder of accurate and honorable practice, a profound medical scholar, an intelligent and accomplished con-

sultant, and a sympathetic and painstaking friend. He was, also, in the direct line of practice, in the daily routine of professional business, as highly regarded. Those to whom he ministered came to thoroughly trust and love him. They felt that the best which human skill could accomplish would be exerted in their behalf, and rested with confidence in his care.

A life like his, full of care and labor, was not without its joys and pleasures. He was happy in his home, and devotedly attached to his family and the many friends who had been attracted by the consistency and beauty of his daily life. A lover of the beautiful, he gathered much enjoyment from the pleasant scenes which the natural world opened before him, and with reverent spirit "looked through Nature up to Nature's God." To such it is a happy thing to live, for each day reveals new beauty, and as the poet has said, "'Tis bliss enough to breathe and be."

Whereas, By the death of Dr. Ralph Kneeland Jones, this association is deprived of the agreeable companionship and valuable services of one of its oldest and most esteemed members,

Resolved, That we hereby desire to express our recognition of his fidelity to the best interests of this society and to those of the profession at large; and that we unite in emphasizing the skill, perseverance, and energy with which, for so many years, he ministered to the mental and physical needs of humanity.

Resolved, That with his widow, his children, and with the community, we mourn his loss, and that we shall ever remember those admirable traits of character which we should all do well to imitate.

REPORTED MORTALITY FOR THE WEEK ENDING NOVEMBER 24, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Typhoid Fever.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	621	235	16.69	15.04	1.12	6.08	4.16
Philadelphia	1,016,758	354	110	13.72	11.20	2.52	6.72	1.40
Brooklyn	751,432	295	108	17.00	11.90	2.04	9.18	.68
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	141	49	16.33	7.81	2.13	10.65	—
Baltimore	437,155	131	37	14.96	14.96	4.56	6.08	.76
Boston	407,024	170	60	19.25	19.25	1.14	10.26	—
Cincinnati	325,000	84	—	14.28	16.66	3.57	5.95	1.19
New Orleans	248,000	104	42	17.85	14.28	7.14	1.19	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	72	23	19.46	15.29	6.95	4.17	1.39
Pittsburgh	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	19	5	21.04	10.52	—	—	—
Charleston	60,145	39	15	5.12	5.12	2.56	—	—
Portland	40,000	10	0	—	40.00	—	—	—
Worcester	76,328	9	7	11.11	22.22	—	—	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	17	6	5.88	17.64	—	5.88	—
Fall River	61,203	22	10	4.55	9.10	—	4.55	—
Lynn	51,467	12	—	8.33	33.33	8.33	—	—
Lawrence	40,175	15	3	17.08	5.66	17.08	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	17	2	11.67	17.64	5.88	5.88	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	7	0	14.28	—	14.28	—	—
Chelsea	27,552	—	—	—	—	—	—	—
Haverhill	24,979	9	3	—	1.01	—	—	—
Taunton	24,796	7	1	14.28	14.28	14.28	—	—
Brockton	24,784	6	4	16.66	33.33	—	16.66	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	6	—	—	—	—	—	—
Malden	18,932	10	3	20.00	20.00	10.00	10.00	—
Fitchburg	17,534	—	—	—	—	—	—	—
Waltham	16,651	1	0	—	—	—	—	—
Newburyport	13,839	3	1	—	—	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2,171: under five years of age 732; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 337, consumption 293, acute lung diseases 264, diphtheria and croup 146, typhoid fever 51; scarlet fever 38, diarrhœal diseases 38, whooping-cough 26, measles eight, cerebro-spinal meningitis six, erysipelas three, typhus fever one. From diarrhœal diseases, New York, eight, New Orleans six, Brooklyn five, Nashville four, Philadelphia, Baltimore, and Boston three each, St. Louis and Cincinnati two each, Washington and Charleston one each. From whooping-cough, New York 11, Brooklyn six, Philadelphia five, Baltimore two, Boston and Washington one each. From measles, New York seven, Worcester one. From cerebro-spinal meningitis, Washington three, New York, Boston, and Cincinnati one each. From erysipelas, New York two, Brooklyn one. From typhus fever, Philadelphia one.

In the 28 greater towns of England and Wales, with an estimated population of 9,398,273, for the week ending November 3rd, the death-rate was 19.6. Deaths reported 3331: infants under one year of age 918; measles 160, diarrhœa 88, scarlet fever 62, whooping-cough 55, fever 54, diphtheria 47, small-pox (London) one.

The death-rates ranged from 10.0 in Brighton to 29.9 in Newcastle-on-Tyne; Birmingham 18.6; Bradford 15.2; Hull 17.0; Leeds 19.5; Leicester 19.9; Liverpool 19.1; London 19.7; Manchester 24.0; Sheffield 22.2; Sunderland 21.0.

In Edinburgh, 15.1; Glasgow, 19.8; Dublin, 24.4.

In the 28 greater towns of England and Wales, with an estimated population of 9,398,273, for the week ending November 10th, the death-rate was 19.0. Deaths reported 3430; infants under one year, 889; acute diseases of the respiratory organs (London) 373; measles 188; diarrhœa 57; scarlet fever 56; diphtheria 45; fever 44; whooping-cough 40; small-pox (Preston and Hull one each) two

The death-rates ranged from 12.2 in Nottingham to 25.6; Newcastle-on-Tyne, 25.6; Birmingham, 18.6; Hull, 12.9; Leeds, 18.6; Leicester, 14.6; Liverpool, 21.5; London, 18.5; Manchester, 23.5; Sheffield, 16.1; Sunderland, 19.4.

In Edinburgh, 12.3; Glasgow, 22.4; Dublin, 27.5.

The meteorological record for the week ending November 17, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Nov. 17, 1888.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.	Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration, Hours & Min.	Amount in Inches.
Nov. 11	29.76	44.0	52.0	40.0	75	46	60.0	S. W.	W.		12	17		C.	C.		1.00	.02
" 12	30.19	40.0	52.0	36.0	60	35	48.0	S. W.	N. W.		18	6		C.	C.			0
" 13	30.55	34.0	46.0	26.0	61	63	62.0	N.	S. W.		8	12		C.	C.			0
" 14	30.42	48.0	62.0	38.0	79	62	70.0	S. W.	S. W.		20	15		C.	C.			.0
" 15	29.85	52.0	54.0	38.0	81	93	87.0	S. W.	N.		8	12		O.	R.		12.00	.47
" 16	29.85	46.0	62.0	42.0	80	85	82.0	W.	N. W.		8	12		C.	R.		3.00	T.
" 17	30.34	35.0	46.0	34.0	81	45	63.0	W.	N. W.		12	18		C.	C.		7.00	.11
Means for the Week	30.14		53.0	36.0			66.0											

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM NOVEMBER 24, 1888, to NOVEMBER 30, 1888.

MCLELLAN, ELY, major, surgeon, having reported to the division commander, on the 23d inst., as requested in Par. 15, S. O. 261, current series, A. G. O., is assigned to duty as attending surgeon at these headquarters, and as examiner of recruits at Chicago, Ill., from that date. Headquarters Division of the Missouri, Chicago, Ill., November 24, 1888.

By direction of the Secretary of War, leave of absence for two months is granted Major Henry M. Cronkhite, surgeon, to take effect upon his being relieved from court-martial duty at Little Rock Barracks, Ark. Par. 7, S. O. 276, A. G. O., Washington, November 26, 1888.

By direction of the Secretary of War, the leave of absence granted Captain Edward B. Moseley, assistant surgeon, in Special Orders No. 67, November 12, 1888, Division of the Pacific, is extended three months. Par. 13, S. O. 275, A. G. O., November 24, 1888.

Leave of absence for one month is hereby granted Captain Robert B. Benham, assistant surgeon U. S. A., Fort Laramie, Wyoming. Par. 1, S. O. 111, headquarters Department of the Platte, November 24, 1888.

By direction of the Secretary of War the leave of absence granted Captain John Van R. Hoff, assistant surgeon, in S. O. No 134, November 1, 1888, Department of the Missouri, is extended one month. Par. 3, S. O. 274, A. G. O., Washington, November 23, 1888.

Leave of absence for one month is granted Captain William F. Carter, assistant surgeon U. S. Army. Par. 3, S. O. 116, headquarters Department of Texas, San Antonio, November 12, 1888.

Leave of absence for fifteen days, to take effect December 4, 1888, is granted First Lieutenant Paul Clendenin, assistant surgeon U. S. Army. Par. 3, S. O. 116, headquarters Department of Texas, San Antonio, November 12, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DETAILS OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE, FOR THE FIVE WEEKS ENDING NOVEMBER 24, 1888.

WYMAN, WALTER, surgeon, from New York, N. Y., to Washington, D. C., November 16, 1888.

LONG, W. H., surgeon, from Detroit, Mich., to Cincinnati, Ohio, November 16, 1888.

FESSENDEN, C. S. D., surgeon, from Norfolk, Va., to Louisville, Ky., November 16, 1888.

PURVIANCE, GEORGE, surgeon, from Cincinnati, Ohio, to Baltimore, Md., November 16, 1888.

AUSTIN, H. W., surgeon, from Chicago, Ill., to Milwaukee, Wis., November 17, 1888.

GODFREY, JOHN, surgeon, from Louisville, Ky., to Milwaukee, Wis., November 14, 1888.

GODFREY, JOHN, surgeon, from Louisville, Ky., to New York, N. Y., November 16, 1888.

MEAD, E. W., passed assistant surgeon, from Baltimore, Md., to Norfolk, Va., November 16, 1888.

GUITERAS, JOHN, passed assistant surgeon, from Camp Perry, Fla., to Charleston, S. C., November 15, 1888.

DEVAN, S. C., passed assistant surgeon, from Savannah, Ga., to Washington, D. C., November 15, 1888.

URQUHART, F. M., passed assistant surgeon, from Live Oak, Fla., to Dupont, Ga., November 3, 1888.

BROOKS, S. D., passed assistant surgeon, from Wilmington, N. C., to Savannah, Ga., November 15, 1888.

STONER, J. B., assistant surgeon, from Charleston, S. C., to Wilmington, N. C., November 5, 1888.

LEAVES OF ABSENCE.

OFFICERS.	PERIOD.	DATE.
Bailhache, P. H., surgeon,	20 days,	November 24, 1888.
Long, W. H.,	16 "	" 21, "
McIntosh, W. P., assistant surgeon,	30 "	October 24, "
Magruder, G. M., "	30 "	November 23, 1888
Cobb, J. O., "	20 "	" 20, "
Geddings, H. D. "	30 "	" 1, "

Representatives at meeting of American Public Health Association: Walter Wyman, surgeon, H. W. Austin, surgeon, John Godfrey, surgeon.

PROMOTIONS.

MCINTOSH, W. P., passed assistant surgeon. Promoted and appointed passed assistant surgeon November 21, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING DECEMBER 1, 1888.

GAINES, J. H., surgeon, detached from the "Dolphin" and ordered home.

ANDERSON, FRANK, passed assistant surgeon, detached from the "Pensacola" and to the "Dolphin."

JONES, WILLIAM H., surgeon, detached from the "Richmond" and to the "Pensacola."

RUSSELL, A. C. H., passed assistant surgeon, detached from the Naval Academy and to the "Wabash."

DRAKE, W. H., passed assistant surgeon, detached from the St. Mary's" and to the Coast Survey.

WHITAKER, H. W., passed assistant surgeon, ordered to the Nautical School ship "St. Mary's."

LEWIS, D. O., passed assistant surgeon, detached from the coast Survey and to the Naval Academy.

WENTWORTH, A. E., assistant surgeon, ordered for examination preliminary to promotion.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held Monday, December 10, 1888, at the Medical Library, 19 Boylston Place. Reader, Dr. A. T. Cabot: subject, "Cases of Laparotomy." Dr. W. W. Gannet and Dr. S. J. Mixter will report a case of "Chronic Ulcer of the Pylorus, with Fatal Hæmorrhage from Erosion of the Pancreatico-duodenalis Artery," with specimen.

F. B. HARRINGTON, M. D., *Secretary.*

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology, and Hygiene, will meet at 19 Boylston Place, on Wednesday, December 12, at 7.45 o'clock.

Paper by Dr. John A. Jeffries: "A Good Bread for Diabetics, containing less than 5 per cent. of Starch," with samples. Dr. Joseph Price, of Philadelphia: "The Sequelæ of Gonorrhœa in Women." Dr. E. W. Cushing: "The Pathology and Diagnosis of so-called Pelvic Cellulitis, with specimens of Pyo-salpinx." Drs. W. H. Baker, J. P. Reynolds, Professor M. Rosenwasser of Worcester University, Cleveland, Ohio, Dr. A. D. Sinclair, Dr. S. C Whittier, President of New Hampshire State Medical Society, and others, are expected to take part in the discussion.

A. L. MASON, M. D., *Chairman.*

ALBERT N. BLODGETT, *Secretary.*

GYNÆCOLOGICAL SOCIETY OF BOSTON, — Regular December meeting. The Society will meet at No. 19 Boylston Place, on Thursday, December 13, 1888, at 4 o'clock P. M. Paper: "Chronic Cystitis in Women," by W. Symington Brown, M. D.

HORACE C. WHITE, M. D., *President.*

SAMUEL N. NELSON, M. D., *Secretary*, 17 St. James Avenue.

APPOINTMENTS.

A. L. MASON, M.D., has been appointed Instructor in Clinical Medicine in the Harvard Medical School.

HENRY SEARS, M.D., has been appointed Assistant Pathologist at the Boston City Hospital.

Original Articles.

MASSAGE IN WRITER'S CRAMP AND ALLIED AFFECTIONS.[1]

BY DOUGLAS GRAHAM, M. D.

Of all the vexatious cases that have come to me for massage in an experience of twenty years of this treatment there have been none more trying than confirmed cases of writers' cramp and allied affections. It was not with regret on my part when they gave up a conflict, the result of which was so doubtful. The history of these refractory cases in my hands has, in general, been improvement after a few massages, soon followed by relapse, abandonment of treatment, and resignation to their fate. Did I graduate the massage and exercises in quality and quantity to meet the indications of different cases? was a question that often occurred to me, and which was as difficult to answer as experts in diseases of the nervous system doubtless find in formulating the best methods of applying electricity in such cases. It was with feelings of satisfaction to me when at last a case came that was by no means indifferent to his fate, whose penmanship was his livelihood and that of his family, and whose faith had not yet been shaken by the croakings of wiseacres, and who had not been deceived by amateur rubbing dignified with the name of massage.

This case was Mr. A. J., thirty-one years of age, who was referred to me by Dr. Geo. W. Gay on the fourteenth of January of this year. He was in good general health, and his muscles were well developed. It was two years before this that he first observed that he was not writing with his usual ease and accuracy, as if out of practice. He is a professor of writing in a commercial college. He gradually grew worse, so that he had to use a larger pen-holder, and grip it harder and harder. Occasionally there were days when he could write well and easy. It was just after doing some very fine writing that had to be reproduced, and which he first outlined in pencil, that his difficulty began. When he first came to me he could write a few lines well and naturally, then the hand and arm became tired, the hand jumped and trembled, he grasped the pen more firmly, and as the fingers contracted he lost his grip altogether; so that he presented three phases of writers' cramp — tremulous, spastic, and paralytic — in one or more of which it usually occurs. When well, he wrote with his hand in the so-called regulation position, resting on the tips of the little and ring fingers, but gradually he had to let his hand descend so as to write while resting it on the whole of the middle phalanx of the little finger, and using the muscles of the forearm rather than those of the hand and fingers. At times the forefinger alone would jump from the pen-holder, and then he would hold it down with the thumb and endeavor to continue writing.

Examination of the hand revealed almost nothing — apparently slight stiffness of motion in the interossei between the metacarpal bones of the index and middle finger, but not more than is often met with in those not troubled with writers' cramp. There was, however, not full strength in extending the fingers, which would point to over-use of the flexors, and the need of exercise of the extensors to counteract this.

It was not till after I had seen our patient a few times that he told me that nine years before he had sprained his back by attempting to shut a heavy trap-door in a steam-boat. He was beneath it, with his hands and arms extended over his head, when the boat gave a lurch, and he was suddenly thrown backwards. For this he had constantly worn a corset which enveloped his whole trunk, in order to support his back. With this he was comfortable, and did not require to lie down to rest during the day, but without it he drooped and sagged down, and soon a burning spot appeared about the middle of the dorsal region. Examination proved that there was nothing at all the matter with his back, unless it were muscular weakness, due to having worn the corset too long. After two massages the patient felt as if he had a new back, and could go for half a day without his support, and in the course of two or three weeks it was laid aside entirely. If the condition of his back had anything to do with his trouble in writing, the latter ought to have appeared much sooner. Neither do I think that imagination had anything to do with his writing, for he did not know what was the matter with him until the day he was sent to me.

To keep the patient at his work, and at the same time attempt to get him well, was the problem to be solved. For home exercises I prescribed at first active extension and separation of the fingers, and later the same against resistance by means of rubber bands and tubes, so many movements at stated times, in order to bring into greater action the less used extensors, and also to give a change of exercise to the interossei, and thus help to restore the lost equilibrium of will, nerve and muscle. But to prescribe writing exercises for a patient whose chirography was like copper-plate did not seem so easy a matter. However, I had no difficulty, for it was evident that he was painfully slow and particular, and when fatigue came on after a few lines he had hitches in rounding the backs or left lower curves of his l's and e's, and in making the upward stroke of the leg of his g's. Therefore, for home exercises in writing I directed large l's made quickly and continuously, followed by the reverse of these, making m's, so as to make him write from the upper arm and shoulder. As time went on, we gradually reduced these in size, so as to bring more into play the muscles of the forearm and hand. When he had become proficient in these, the next exercise was a little more difficult, and consisted of *lelelele*, large and rapid at first, then gradually diminishing, and later the exercise was *legleg*, practised in the same manner many lines at a time, and in this way he soon got over his hitches and halts.

But calisthenics and elementary writing exercises, though helpful, have never been known to cure a case of writer's cramp without other assistance. And for this purpose I gave the fingers, hand, and arm massage, deep manipulation, almost daily for four weeks. After the first two massages the patient wrote with unusual facility, but tired as soon as usual. After the third massage he was fatigued at the end of the first line, and it is a wonder he

[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene of the Suffolk District Medical Society, October 10, 1888.

did not give up treatment then, as these cases are apt to do. After four massages he wrote with greater ease, and made delicate movements of fingers and thumb which he had not been in the habit of doing, and he was but slightly fatigued with ten lines. After the third massage, which included the back, he was almost faint with hunger, though he had just had dinner before coming to me. I have observed the same effect in other cases, in one a physician, from percussion alone for a few minutes on the back. At the fifth visit there was some lameness of the muscles of hands and arms from the manipulation, which had not been rough, and this is generally a good omen. He thought the writing exercises which I prescribed for him were excellent practice to train his boys at the commercial college to write a free, easy, and rapid hand, so he used them for that purpose. After the fifth and sixth massages, wrote still more easy and for an hour and a half each time, stopping occasionally to explain to his students. At the end of nineteen days he had no difficulty in grasping his pen-holder, and he could write with ease for three hours, and at the end of twenty-eight days he wrote with ease and fluency and animation. And thus he improved, with variations, but all the time making a better average.

At times we had to call a complete halt for a few days in his home exercises, when it was evident that he was overdoing and getting his nerves and muscles into an irritable condition, which was relieved by massage alone. But when this condition has arisen of its own accord or from writing, in other cases, it might be an indication to urge them on with exercises in order to tire out the affected nerves and muscles and their central connections, and thus allay over-excitability. The same means incites nerves and muscles that are inactive, but here, in order to be of benefit, must stop short of over-exciting them.

Our patient might have been discharged at the end of four weeks, but this was not in accordance with his wishes, for he did not then feel safe without the aid of massage, so he continued to visit me two or three times weekly for several weeks longer. At the end of six weeks, though he was generally fatigued from sickness and death in his family, yet he had not the slightest difficulty in giving his writing classes full instruction from nine to twelve o'clock, and it was during the last ten days of this time that I thought it well for him to have a tonic consisting of five minims of tincture of nux vomica, twenty minims of cascara cordial, with thirty-five drops of elixir of calisaya, three times daily. He called upon me again ten weeks from the time I first saw him to report that he had attained perpetual motion, for the longer he wrote and the more he exercised, the easier they became and the better he felt. I have heard from him recently, and he has continued well. Without this patient's hearty co-operation, he would doubtless have sunk into the slough of despond.

The two following cases are the kind not likely to be benefited by massage nor anything else: —

Mr. W.W. was forty years of age, well nourished, and had good strong muscles. When eight years of age he had scarlet fever, which left him with general neuralgia, from which he has never fully recovered. He was a clear-headed man of business, though he suffered from dull headache all the time, slept poorly, and woke up tired. He was not so well when on a vacation for a few days as at business. He had general feelings of burning, fatigue, and stiffness, and also heaviness of the legs. There was literally too much tension of both mind and body. He was evidently a pronounced case of neurasthenia. From the time he learned to write until he was eighteen years of age he wrote a large free hand, but at this time he became a clerk, and wrote a small careful hand, slowly, and with increasing difficulty. In January, 1883, he was much run down, and work was hard for him, and during the following month he had to stay at home with indefinite symptoms of prostration and fever. When he returned to business he could not write at all in the usual way, but took the pen between the index and middle fingers. At first there was flexor spasm of the fingers and thumb, accompanied with extensor spasm, in dorsal flexion of the hand. After a time he was obliged to give up writing nearly altogether, so that by September of the same year he had to limit himself to the signing of his name. More than this caused the hand to tremble, the fingers and thumb to flex, then the hand would curl up in the wrist, and the cramp became so painful that he had to desist. Counting coin produced the same symptoms in the left hand. He suffered most from discomfort and tension throughout the whole of the right side of his body; his right eye was incorrigibly astigmatic, and he had catarrh of the middle ear as long as he could remember.

He went to Europe and visited an eminent specialist twice a day for a month for massage, writing exercises, and calisthenics. He came home labelled "cured," but he could not write any better. As he had previously been to me for his general troubles, my method of doing massage stood still higher in his estimation for his visit to Europe. So he came to me for a special trial at his writers' cramp. Under a month of daily massage with the use of Jacoby's wristlet and elastic tubes to exercise the extensors of his thumb and fingers at home, and practice with Nussbaum's writing apparatus, no benefit ensued. His business was in a bad state, and he was under constant worry. This is one of the cases not likely to be improved by massage, or if so, only temporarily.

Mrs. F. H. was forty-nine years of age, and for the previous twenty years had written much. Three years before coming to me she first noticed that it troubled her to hold her pen. There was nothing peculiar about her handwriting, but after a few lines the thumb slipped off the pen-holder by gradually extending itself (chronic spasm), and this was attended with pain in the metacarpal space between the thumb and index finger, and at the outer aspect of the insertion of the biceps, in the region of the musculo-spinal nerve, as well as in the anterior fibres of the trapezius and at the base of the skull. With the pen between the fore and middle fingers she could write fairly well for ten minutes, but more than this caused pain in the places just mentioned. The whole arm felt lame and heavy. Housework, such as dusting or ironing, was difficult, and every motion of the arm caused pain. The left arm had been similarly affected for

three months. After I had seen her a few times, she admitted that she felt somewhat ashamed of the unusual but natural prominence of the metacarpal phalangeal joints of the thumbs, and in order to partly conceal this, she had been in the habit for many years of moving this part of the right thumb into the palm of the hand. Hence, no doubt, had arisen spasm of the adductor pollicis, and on examination it was found that this muscle was sore and tender. Her general health had always been delicate. She slept poorly, was dyspeptic, constipated, had uterine catarrh and various other ailments. She had been utterly proof against all sorts of medication in the hands of the most skilful gynecologists and neurologists. Massage had no better result, but with a Nussbaum's apparatus she gets along very well.

I might weary you with such doleful accounts of unsuccessful cases. Suffice it to speak of a few of them briefly. Of three obstinate ones that were reasonably persistent in treatment, the results of massage and movements, and subsequently the use of electricity and subcutaneous injections of strychnia were unsatisfactory, though the affected members became stronger and disagreeable feelings disappeared. They all arose from over use. One was inability to write, another could not play on the piano, and the third experienced great difficulty in telegraphing. They presented the usual symptoms of such affections, without spasm and tremor. So far as I have had access to Wolff's numerous cases, treated by massage and exercises, spasm and tremor were the prominent features of his successful ones.

But with quite recent or incipient cases of writer's cramp and similar troubles, my experience has been much more cheerful, the patients recovering safely, quickly, and pleasantly with a very few massages, so that they remained in blissful ignorance of how near the rocks and shoals of disability they had been sailing. In 1877 I reported several such cases in the *New York Medical Record*, which need not be repeated here, but I will only mention one of more recent date. It was that of Miss E. P., twenty-eight years of age, of slight frame but tolerably firm muscles. The previous winter her arms and hands would frequently get tired from playing the piano, but would recover by resting for a day. She had the same experience the following winter before she came to me. Three days before her appearance she had played the piano for three and one-half hours, too long for her, with the result that the hands and arms were greatly fatigued, and there was twitching of the muscles, and rapid slight contractions of the fingers, alternating with a dull ache, and the whole arms felt lame to the shoulders. Under two days of rest alone her symptoms had become worse, and on the morning of the third day, when she first came to me, she could not turn a newspaper nor play a single note on the piano, and there was slight swelling of the affected members. Thirty minutes of stroking or *effleurage*, alternating with deep massage, at 10.45 A. M., was accompanied and followed by perfect comfort for six hours, and the slight discomfort which then returned was forgotten in the social enjoyment of the evening. Next morning slight return of the symptoms below the elbows, none above. Massage at 3 P. M., with greater effect. She returned again after two days' interval and reported that she had played the piano for fifteen minutes the previous evening, and thirty minutes next morning, with but little uneasiness. Massage of one arm, she said, relieved the other before it had been *masséed*. After the third massage she regarded herself as cured, and said that she would certainly return if she were not. As I have not heard from her, she probably fully recovered, for eighteen months have elapsed.

In this last case the advantages to be gained by months of rest were evidently made much more secure by three massages in a few days. Zabludenski has made some interesting experiments, showing how fatigued muscles are influenced by massage. After severe exercise a rest of fifteen minutes made no essential difference in the fatigued muscles, but after massage for the same period the exercise could be more than doubled over what it was at first. One person experimented upon lifted a weight of one kilogramme (two pounds eight ounces) eight hundred and forty times from a table on which the arm rested horizontally, by extreme flexion of the elbow-joint, at intervals of one second, and after this he could do no more. When the arm had been *masséed* for five minutes it lifted the weight more than 1100 times in the same manner as before, but without fatigue. The difference in muscular sensation was very striking after rest alone from work in comparison with that after massage. After six hundred lifts of two kilogrammes, the feeling was that of unchanging stiffness during and after a pause of five minutes for rest, but after five minutes of massage the muscles felt supple and pliable.

The effects of massage in these cases are much the same as in others,—pre-eminently tonic and sedative. Gentle stroking may be used for its soothing impression upon the cutaneous nerves, as well as to push along the superficial lymph and venous currents; deep kneading for its anæsthetic effect, and to hasten absorption of effete products in all the accessible tissues, to bring a rapid supply of fresh blood while hurrying on that which is laden with asphyxiated juices. Percussion may be used to stimulate a languid skin and muscles deficient in contractility.

The suggestion which I published eleven years ago, with regard to these cases, has not suffered with the lapse of time. It was that when sufficient time for rest has been allowed, and in the absence of spasm, or spasm alone of the flexors being present, it might be useful to add resistive motion, so as to bring into more powerful action the opposing and less-used extensors, as this would tend to restore harmony of action by a counterbalancing distribution of will, nerve, and muscular effort. Numerous claimants for priority in the use of massage in writer's cramp have sprung up since then.

— The largest professional fee for limited service is said to have been paid to Surgeon-Major Freyer, of the Indian medical service, for treating the nawab of Rampoor for three months' suffering from rheumatic fever. The nawab gave him a lac of rupees, $50,000.

A CASE OF CHRONIC BRIGHT'S DISEASE,

COMPLICATED WITH HEMORRHAGE INTO THE PONS VAROLII. WITH AUTOPSY.[1]

BY D. E. BAKER, M. D., NEWTON, MASS.

THE patient, a married woman at the age of forty-three, first came under my care May 23, 1886. For some months previous she had been under the care of a homœopathic ophthalmologist, who had told her that inflammation existed about the left optic nerve and yellow spot, with partial paralysis of one of the muscles in the eye. The urine had been examined with negative results. For a number of years she had slept considerably each day in addition to sound slumber at night. For a year menstruation had been irregular.

After attending church twice on the above date and entertaining guests in the evening, she suddenly felt faint and dizzy, and ineffectually tried to fan herself. Consciousness remained unimpaired. There were no convulsive symptoms. She felt severe pain with a peculiar bad feeling in the temples, while simultaneously the left side became nearly powerless. I found her pale, bathed in cool perspiration, with but slight control of the left side. The speech was thick and inarticulate. She could swallow with difficulty, choking meanwhile. The mouth was somewhat drawn to the right; the tongue protruded to the left; the left cheek was flattened. I did not then note strabismus or inequality of the pupils. The pressure clasp of the left hand was barely perceptible. The left thumb could be moved over the palm, but the fingers seemed incapable of separate motion, and the left leg and foot were powerless. The entire side was anæsthetic. Temperature 98°, pulse 104.

The next day the patient tried constantly to talk, but could not be understood. There was no apparent dulling of the intellectual faculties or failure of the mental grasp of words. After a few days the speech became plainer at times, when the patient was startled or especially eager to be understood. There was great restlessness, which was allayed by the bromide of sodium. The eyes were bright. The right pupil was smaller than the left. The fundus could not be examined to my full satisfaction, but later I detected white streaks in the neighborhood of the macula.

Three days after the attack retention of urine occurred, and for nearly a week the catheter was necessary. Subsequently there was at times incontinence during sleep at night. When first examined the urine gave a spec. grav. 1010; the quantity per diem was thirty-eight ounces; the color light, turbidity and sediment considerable, reaction faintly acid, albumen one-eighth per cent., urea diminished. The microscope revealed hyaline and granular casts.

The left side remained more moist and cool than the right, and showed œdema, which increased for two weeks, then gradually declined. Early in June the articulation began to improve slowly, but varied in clearness from day to day. The tongue was put out straight. There was a feeling of numbness or thickness on its left side. The left arm and leg felt lifeless to her, according to the rule in such cases; sensation and motion first reappeared in the paralyzed leg, which the patient could slowly draw up by the third week of her illness.

Dr. S. G. Webber saw the case in consultation on June 5th, and finding the right eye crippled in its movements, with failure of the pupil to dilate when the lids were closed, thought that these facts, in connection with the left paralysis and other symptoms pointed to a hemorrhage into the upper part of the pons.

The first signs of returning sensation were numbness, formication, and tingling in the disabled side. Sensibility to heat and cold was at first slight. She could not at first discriminate the two, the touch of ice on the left hand giving the sensation of a hot iron. The reflexes were from the first feeble, and no marked contrast on the two sides could be obtained in reference thereto.

For several weeks the right pupil remained smaller than its fellow, but the responsive power to light gradually improved. The eyeball on this side was turned to the left. There was a slight inclination of the head in the same direction. During the first month of the disease the patient suffered from catarrh in the left naris. There was a similar trouble in the corresponding eye. The temperature after the first week did not rise above 100° F., but the pulse remained high throughout, averaging 120. Cathartics were in frequent requisition to relieve an abiding tendency to constipation. After the 1st of August there was constant complaint of pressure, weight, and pain about the bowels, partly due to tympanitis, perhaps not a little resulting from dropsical effusion, which, appearing first about the feet and legs, soon involved the abdominal parietes and cavity.

The patient had at times a fair appetite. The diet consisted largely of milk, but meats and fruit were not withheld. The chlorides of iron and arsenic were given three times a day, with improvement in respect of the color and blood-condition of patient. I alternated cum above. Her vision did not become clear. She could read only the coarsest print of the daily advertisements. The handwriting was a trembling, zigzag scrawl. Diplopia was at times quite troublesome. At first the second object was seen above its mate, but later at its right hand. Ultimately, the crippled eyeball largely recovered its power. About the middle of August hyperæsthesia developed. Pain was caused by a light touch on arm or leg; for some time her nurse had to omit the daily bath. The patient occasionally asked to have her "graveyard leg" moved. Almost simultaneously she had begun to complain of a terrible constriction about the temples and occiput, as though a ribbon was drawn tight around the head. Strength had returned to the left upper extremity in so far that she could raise the hand eight inches from the arm of her chair, and by much fumbling could move it up to her chin. These movements were attended by tremor.

Digitalis for a time diminished the œdema of the extremities and relieved the dyspnœa incident to her disease, but its use was not persisted in for any length of time, as after a few days no further gain could be noted.

[1] Read at a meeting of the Middlesex South District Medical Society, in Lexington, October 12, 1887.

Several severe attacks of faintness and dyspnœa occurred during August and September, and twice I detected signs of pulmonary œdema. Stimulants and cupping brought relief. The cardiac area of dulness was somewhat enlarged to the left. There was no evidence of valvular trouble. Breathing was free only when the sitting posture was retained. After August 1st the woman slept in her chair, saying she knew she would suffocate if she lay down. During July the urine had increased in quantity to between four and five pints daily, and was of lower specific gravity. She had recovered strength so far as to take a few uncertain wavering steps from her chair, with the support of one person. If she attempted to even stand alone she swayed from side to side; the gait was unsteady at best. In early autumn, nausea and vomiting were prominent symptoms, and often accompanied by great restlessness and mental depression. The urine diminished in quantity again. The albumen had increased to one per cent.

The legs began to ulcerate in November. From these openings, as well as from fresh holes previously made, several pints of serum discharged daily. This outflow did not give much relief. The dyspnœa increased, whistling râles could be heard on inspiration. Hot-air baths had been tried a month before, but gave no relief and proved depressing. Cathartics afforded more comfort than any other line of treatment. Cupping gave some relief to the dyspnœa. Patient at times leaned forward and braced her shoulders up in her struggle for breath.

At four o'clock, December 23, patient waked in her chair with severe lancinating pain in the precordia and left side. I found on examination a marked increase of the area of precordial dulness. There was flatness over the left base, front and back, below the third interspace. The heart sounds were very feeble at the apex, but slightly intensified by pressure with the stethoscope. On auscultation a loud friction murmur, reduplicated on the cardiac impulse, was heard over the left side below the second rib, having a maximum intensity and a musical quality over the base of the heart.

Above the fifth rib, voice and respiration were bronchial. Below that limit there was absence of respiration. Sibilant and subcrepitant râles could be detected over other parts of the chest. The cheeks were flushed, but temperature and pulse were not much increased.

Pain was relieved by painting with tr. iodine. Stimulants and milk constituted the internal treatment. The family were warned of the end, which came abruptly twenty-four hours later.

The autopsy, thirty hours after death, disclosed an abundance of serum in the cellular tissue and large cavities. The brain was pale and œdematous. Nothing abnormal was detected in hemispheres, ventricles, and ganglia. An oval, softened blood-clot, the size of a cherry, occupied the right anterior portion of the pons, encroaching slightly on the corresponding crus cerebri. A wavy reddish-brown cyst wall separated the yellow fluid contents from the surrounding tissues. The pericardium contained five ounces of turbid fluid holding flakes of lymph in suspension. The base of the left ventricle was roughened by patches of recent lymph deposit. The heart weighed seventeen ounces. The wall of the left ventricle was four-fifths of an inch thick. Both lungs were œdematous. The left lower lobe was of the color and consistency of the spleen, and non-crepitant. Bloody serum exuded from the cut surface.

Both liver and spleen were increased in size and firmness.

The kidneys weighed three ounces each. The capsule was readily detached, exposing a smooth, mottled surface and showing yellow patches of varying size.

On section the pyramids stood out from the cut surface and were much darker in color than the cortex. Streaks of a yellow color extended outward from the bases of the pyramids. The zone of the glomeruli presented translucent points and lines which turned mahogany brown on the addition of iodine.

The case illustrates an interesting variety of pathological processes, the sequence of which may not be fully unravelled. The primary cause of death may be differently estimated. Was amyloid degeneration or the nephritis the prior affection? and was either or neither the cause of the vascular degeneration that induced the brain lesion? The history of the habitual abuse of alcohol by the father, and of death by phthisis of a brother, of the patient may be interpreted as establishing a tendency toward the first-named disease. Is it conclusive against a tendency to the last-named disease?

The kidney process seems to me to have been responsible for the steady march of symptoms to a fatal issue, for the enlargement of the heart and the consequent increase of arterial tension, for the degeneration of the cerebral vessels that ruptured when that tension had augmented during a day of unwonted activity and excitement.

Of the marked symptoms of the pontine hemorrhage, all but the lack of co-ordinating power gradually abated.

REPORT ON DISEASES OF CHILDREN.

BY T. M. ROTCH, M. D.

GLYCERINE ENEMATA IN CHILDREN.[1]

GLYCERINE enemata have of late attracted so much attention in the various periodicals, that a series of experiments with them on children, by G. A. Carpenter, of the Evelina Hospital for Children, Southwark, may be of interest. Carpenter says that a large number of children treated in the hospital require a laxative, constipation being more or less marked, in some due perhaps to defective maternal training in that respect; in others to the sedentary existence consequent on hospital régime, or to a combination of both causes. At the Evelina Hospital children are not allowed to pass more than two days without an action of the bowels. The results of two hundred and fourteen enemata given to sixty-three children during four months are tabulated according to sex, age, disease, quantity of glycerine used in drachms, time taken to act, and number of movements. An analysis of this table shows that an action of the bowels followed in five minutes or under in ninety-five instances, in ninety in thirty minutes or less, and in four the time was not recorded. In the cases where the enemata failed

[1] Lancet, Nov. 10, 1883.

to produce the desired effect, it was noted that the failure was only temporary, and that in these children the bowels responded to the glycerine at one time or another, and in no case was there a complete failure.

As regards the quantity of glycerine used, one drachm was given to one hundred and fifty-six cases, a drachm and a half to forty-eight cases, two drachms to seven, and on two occasions three drachms were injected. In one hundred and fifty-four instances the injections were followed by normal movements, in twenty-six the movements were loose, in eighteen they were of more than the natural consistency, in six the enemata were followed by scybala, and in ten they were returned or failed to act.

In no instance were the enemata attended by unpleasant symptoms either locally or constitutionally. Reviewing shortly these results, Carpenter says that he is very favorably impressed with glycerine enemata as compared with the laxatives and purgatives usually employed; he finds that they are easy of application, unattended by the slightest pain or discomfort, quick and natural in action, and seldom fail.

RAPIDLY FATAL CHOREA.[2]

Cook and Beale report a fatal case occurring in a girl of nine years, in whom the choreic movements constantly became worse; delirium developed with slight fever, rapid and feeble pulse, and rapid and interrupted respiration. Death suddenly occurred one hundred and thirty hours after the onset of the disease.

The autopsy revealed extreme anæmia of the pons and medulla, but no other changes of note in other parts of the body.

INTUSSUSCEPTION.

The recent valuable paper on intestinal obstruction, read by Professor Fitz before the Congress of American Physicians and Surgeons, directs our attention to the large proportion (32%) of cases of intussusception occurring in the series of two hundred and ninety-five cases of obstruction which he has so carefully analyzed. When from this series the cases of least clinical importance were excluded, it was found that out of two hundred and thirty-six well-authenticated cases of the more practically important forms of obstruction, ninety-three were represented by intussusception, and of these ninety-three cases a large proportion, thirty-one, were under the age of one year.

Intussusception is then more common in the first year than at any other period of life, and it would seem, from the clear clinical picture which it usually presents after the first forty-eight hours of the disease, that its diagnosis would be a simple matter and not attended by any great degree of difficulty or uncertainty. In practice, however, it is found that, as a rule, the diagnosis of infantile intussusception is not made until the disease is well established. In almost every case the early hours of the disease present symptoms which are mistaken for those of simple indigestion, and remedies are administered, which when thought of in the later stages of the invagination, cannot but cause a feeling of regret that the correct diagnosis had not been arrived at earlier. When we consider what a purely mechanical condition an intussusception presents to us for treatment, and how every hour of delay increases the difficulty of successfully reducing the invaginated intestine, it is well to report those cases which, by being treated early, have recovered without the aid of laparotomy. In this connection the two cases reported by F. R. Humphreys, in the *Lancet* for October 27, 1888, are of great value and well worthy of record. Humphrey's remarks on the mechanical treatment by the rectum being of especial interest and practical importance.

Case 1. Male, two years and a half old, taken ill January 21st, 11 A.M., after a good breakfast at 8.30 A.M. Sickness, followed by diarrhœa (with a streak of blood in it) and abdominal pain, were the first symptoms. The pain was intermittent, but very frequently repeated, and the child turned over on to his stomach on each recurrence, seeming to be in considerable distress. He was first seen early in the afternoon. He was then vomiting everything that he took, while at the same time he was complaining of hunger. The pulse was 118; respirations, thoracic, 32; temperature 99.2. The abdomen on the right side was rigid and dull, and there was a lump to be felt about two inches to the right and one inch below the umbilicus. Considerable blood had been passed by the rectum. At 9.30 P.M., about two and a half ounces of pure blood, not clotted, had come from the rectum. On examination of the abdominal tumor, previously noted, distinct peristaltic movement was detected in it; it did not appear to have altered its position; it was about the size of a large walnut. An examination of the urine showed plenty of phosphates but no albumen. A No. 8 gum-elastic catheter was attached to a Higginson's enema syringe, and about eight ounces of warm water were injected into the rectum, the catheter being passed about three inches. After a little difficulty, with the injection of the last half-ounce something seemed to give, and the child moving, the catheter slipped out. Only slight force was used. On examination of the abdomen the lump had disappeared and the colon appeared to be full of water. Chloroform was unnecessary, the child being very good. A pad and bandage were then placed on the abdomen, the pad being over the right iliac fossa. A few minutes later, on being placed on a chair, the child passed about four ounces of water tinged with blood. The next day, after having passed a good night, without sickness, pain, or passage of blood, the bowels were easily and naturally opened. The abdomen was rather tender, but no lump was to be felt, and the child appeared to have nearly recovered. Later in the day, however, pain came on again, the right knee being drawn up and the head and body being thrown back during the paroxysms, but, unlike the first attack, the child was not restless. There was dulness and tenderness at the spot where the tumor had originally been noticed. The temperature was 99°. There was sickness on the 25th and 26th.

The pain continued with short intervals until February 9th. On the evening of the 27th there was a constant gurgling in the right iliac fossa, and opium was given for the pain, but without any effect. On February 3rd a glycerine enema seemed to act

[2] British Medical Journal, 1888, 1, 795; American Journal Medical Science, Nov., 1888.

well, both in emptying the rectum and relieving the pain. By February 8th the child had lost considerably in weight and had become very pale and weak. On the 10th the pain had left him, and by the 3rd of March he appeared quite well. The unusual feature in this case was the persistence of pain after the reduction. This pain, moreover, was situated just at a point where the lump was observed to have disappeared, and was periodic in character, being evidently determined by peristaltic action. It appeared possible that the intussusception had been incompletely reduced, as the caput cæci when congested has a tendency to retain the depression. As opposed to this view was the absence of gurgling or the rising of a coil when the pain occurred. The only other suggestion in explanation of the prolonged symptoms was the injury inflicted by the strangulation. That this injury was severe was proved by the escape of so large a quantity of blood. It is probable, therefore, that the continued pain must, according to Humphreys, be attributed to the remaining swollen condition of the intestine, with its accompanying local enteritis, or rather, colitis.

Case 2. An infant eight and a half months old, was first seen August 9th. It had apparently been in perfect health up to 3 A.M. on the 8th. At this hour it was seized with vomiting and pain, and a few minutes later passed a bloody stool. From that time up to 11 P.M. on the 9th, there was incessant vomiting and constant flow of blood-stained mucus and serum. Once a little solid darkish material passed. When seen, the condition was as follows. The infant was a fine one and breast-fed. It lay on its back with its knees drawn up, but every now and then put itself in the opisthotonos position, or one approaching it. It looked drawn and anxious. The pulse was full, the tongue red. Examination of the abdomen showed no change apparent to the eye; to the touch there was resistance under the right rectus, midway between the umbilicus and pubes, and dulness on percussion. The abdomen was tender everywhere, but especially so over the region of dulness. Under chloroform nothing further was detected. Rectal examination showed the bowel to be empty as far as the sigmoid flexure. Nothing like a tumor was to be found anywhere.

In spite of this, as the symptoms pointed to intussusception, the infant was first allowed to come out of its chloroform, and then a pint of water was injected with a Higginson's syringe, though a No. 8 catheter passed well into the rectum. The water was not retained, but a second attempt was more successful, and after injecting slowly sixteen ounces, the infant suddenly stopped crying and appeared to watch attentively the sensations it was experiencing in its abdomen, and its expression became one of relief. Four more ounces were then injected to make sure of the reduction. The blood ceased to flow at once. The vomiting went on for twenty-four hours longer, the temperature rising to 101.2° F., but most of this disturbance was accounted for by the child being in the act of cutting its teeth, as it made a rapid and perfect recovery.

These cases, provided that the diagnosis of intussusception was correct, illustrate the ease with which certain forms of invagination can be managed if the treatment is early and prompt. (The case of invagination in an infant six months old, reported March 9th, 1882, by Rotch, presented conditions which, as shown by the post-mortem examination, would not only have received no relief from an injection of water, but from the twisted position of the retained cæcum would have become still more tightly fixed by the water.) Humphreys considers that the mechanical problems involved in the process of reduction of an intussusception seem to show the following results. If we take the invaginated portion of the intestine as wedge-shaped, it is evident that the base of the wedge may be considered as pointing upwards in the direction of the stomach or downwards towards the rectum, according as the invaginated part is swollen sufficiently to dilate the intestine outside it, or as it is smaller than its own neck where the compression takes place. If the wedge's base be directed downwards, then, since the intestine is fully dilated, and since a force applied to a mass of liquid under such circumstances acts equally in all directions, then a considerable part of the forces which act on the sides of the wedge tends to drive it downwards. This resultant will, at any rate, tend to retard, to a considerable degree, the reduction of the bowel. If, on the other hand, we have previously emptied the œdematous parts by pressure, either from within or from without, then we have the wedge's base directed upwards, and all the force applied at the rectal end tends to drive the invaginated bowel in the desired direction. As regards the other forces called into play, we need only consider that one which acts at the neck of the invagination in an upward direction, and half of whose power acting on the outer intestinal wall is at once lost, and that one which dilates the intestine. The former it is unnecessary to consider further; the latter, brought into play, as it is, on the same principle as is employed in a Bramah's press, may be enormous, and quite capable of rupturing the intestine if not kept carefully under proper control.

(To be continued.)

Clinical Memorandum.

SYPHILIS OR TUBERCULOSIS?[1]

BY F. W. STUART, M. D.

A. B., twenty-six years old, born in Germany, came to this country in 1884. His father and his mother, respectively fifty-eight and fifty-three years old, are both living in good health. His paternal grandparents died, the one at eighty-two, the other at seventy-nine, from causes unknown to him, or, as he expresses it, from old age. His maternal grandfather died at sixty from "old age," and his maternal grandmother at forty-five from intestinal obstruction. His uncles and his aunts were all living when he left Germany, and, so far as he knew, were all in good health. His only brother died at twelve from "dropsy," which was attributed to a blow on the chest resulting from a fall. He had no sisters. The patient claims that up to 1886 he always enjoyed good health. He says he never had any form of venereal disease, though he admits occasional

[1] Read before the Section for Clinical Medicine, Pathology, and Hygiene, of the Suffolk District Medical Society, Oct. 10, 1888.

intercourse with prostitutes before marriage. He denies loss of hair, headache, lumps or spots of any kind, sore throat, or any of the usual symptoms of syphilis.

He was married in 1885, and an annual baby has been the result. The one born in 1886 lived to be six weeks, the one in 1887 to be fifteen days old. The mother could nurse neither of these owing to entire absence of milk. I have been unable to ascertain any facts about them that have any special bearing on the father's case. The third child, born in August, is still living, and seems to be in good health. This time the supply of milk was at first ample, but is already scant.

As stated above, until 1886 A. B. enjoyed good health, but then he suffered from attacks of acute pain, which were attributed by the attending physician to a movable kidney.

In June, 1887, he crushed the index finger of his right hand in some machinery, but the injury was so slight that he attached but little importance to it. In about one week he noticed a swelling over the metacarpal bone corresponding to this finger, and later similar swellings on the ulnar side and flexor surface of the wrist. These and other abscesses on his hands, wrists, and head were opened after four to five weeks of painless growth, but all failed to heal promptly. In November the right elbow began to swell, and at the same time he complained of short, shooting pains in his left knee, which were worse in wet weather, and prevented walking.

About the end of November the middle phalanx of the finger was removed, and two openings were made in the swelling on the under and outer side of the elbow and a drainage-tube was put through. The tube was removed at the end of twelve days, but the openings still discharge. In January the index finger was amputated at the first joint. He was now continually confined to the bed, and on March 31st entered one of the charitable institutions of the city. Through the kindness of the resident physician I have been able to consult the hospital records of the case. At the time of entering there were noted several crusts on the wrists and hands, a small fluctuating swelling between the knuckles of the third and fourth fingers of the left hand, cicatrices behind the right ear, on the brow, near the internal canthus of the right eye, and the external canthus of the left. The right elbow was enlarged, and stiff with two openings discharging pus. The left knee was enlarged, with a fluctuating swelling on the inner and the outer side. The knee was bent and could not be extended.

He was given ten grains of iodide of potassium three times daily, and appropriate local treatment was carried out.

On April 28th the knee was aspirated and four ounces of mucopurulent fluid were removed. On May 14th the amount of iodide was increased to fifteen grains three times daily.

On May 18th a free incision into the joint was made and considerable turbid fluid evacuated. The joint was filled with "tubercular" material, and some erosion of the cartilages was noted.

On June 12th the knee was amputated. The stump healed by first intention.

Towards the end of June the patient insisted on leaving the hospital.

He next was cared for by Dr. Thompson, who prescribed the "Mistura L" of the Boston Dispensary formula. This mixture gives about one-third of a grain of the red iodide of mercury and eleven of the iodide of potassium to a teaspoonful.

In August I was asked by some of his German friends to take charge of the patient solely because I could speak German to him. He told me he thought he was improving slightly. I found him emaciated, unable to sit up in bed, and the physical conditions practically the same as when he entered the hospital. In particular I noticed that the right knee was now swollen, and there was also an abscess on the stump of the left knee. There was a very large swelling on the inner side of the right elbow, which was markedly fluctuating.

The heart and the lungs presented nothing abnormal. Though a diagnosis of general tuberculosis had been made, I determined to push antispecific treatment, and ordered twenty grains of the iodide of potassium before meals, in addition to the mixture L after meals.

Improvement was now rapid: the swelling of the right knee disappeared entirely, and that of the elbow was much reduced, the joint becoming freely movable. By the middle of September the patient was able to walk three miles, and complained only of the pain in the shoulders which the crutches caused him.

During the last week in September he failed to retain his medicines, and complained that merely looking at the bottle served to nauseate him. I accordingly told him to omit it for two weeks. The improvement in his general condition was so great that he expected to begin work as a cigar maker October 1st. No position being open, October 3rd he worked for ten hours at fret sawing, which required constant motion of the affected elbow. The next morning he complained of great pain in the joint, and on removing the bandage a considerable quantity of pus was discharged from the openings already spoken of. The joint was swollen considerably, and deep furrows marked the upper and lower edges of the bandage. I now renewed the antispecific treatment, giving the iodide of potassium in tr. gent. co. before meals, and the mercury in pills after meals.

Present condition. Patient has gained greatly in strength and weight, and yesterday walked to the city. All of the ulcers on his hands have healed, and the swelling between the knuckles of the left hand has disappeared. The swelling on the flexor surface of the right wrist has almost disappeared. The elbow joint is greatly reduced in size. The swelling on the inner side is reduced to the size of a walnut, and that on the outer side is not marked, though the openings still discharge pus. The ulcer on the stump has healed, while that on the ulnar side of the wrist is about one half as large as when I first saw him.

In making the diagnosis I think only two diseases need be consulted, namely, tuberculosis and syphilis. It seems to me that the history of the case does not point in either direction. The family history is good and the lungs are healthy. He denies syphilis, but, where it is suspected, I think it unwise to give

any weight to the patient's denials. I do not see how we could differentiate between these two affections, except by noting the results of careful and persistent treatment.

If the lesions be due to syphilis there is moderate hope for complete recovery, whereas if they be of a tubercular nature the prognosis, it seems to me, is bad, even as regards time. Therefore, to facilitate making a diagnosis, and to give the patient his better chance, it seems to me antispecific treatment is indicated.

This was begun at the hospital, but in my opinion not so thoroughly as could be desired. Personally I should hardly be satisfied with the exhibition of fifteen grains of iodide three times daily, and, indeed, would give certainly double that dose.

Moreover, I believe that a mixed treatment is indicated in these cases. I have formed an opinion, based on an insufficient number of cases, it is true, that the treatment of the tertiary lesions of syphilis is to be based on the previous treatment. Where the patient has received at the outset of his syphilis a thorough course of mercurial treatment, I believe that the tertiary lesions yield readily to the exhibition of iodine alone. Where there has been little or no treatment during the early manifestations, I believe the tertiary lesions are more persistent and difficult of treatment, and in my experience only a mixed treatment, that is, the exhibition of both mercury and iodine, gives anything like rapid results. Whether this view be correct or not, I think it wise never to despair of antispecific treatment until these drugs be given together.

Has the improvement in the patient's condition under the treatment indicated been sufficient to warrant a diagnosis of tertiary syphilis? I think it has. Were the lesions of tubercular origin, considering their number and extent, I should not expect so much improvement under any mode of treatment, least of all under that followed. I certainly feel encouraged, and shall continue in the hope that I may soon see my patient again the support of wife and family.

Dec. 8. Patient has continued to improve, and considers himself so well that he neglects to take his medicine regularly. F. W. S.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT. SECTION FOR CLINICAL MEDICINE, PATHOLOGY, AND HYGIENE.[1]

ALBERT N. BLODGETT, M.D., SECRETARY.

Dr. E. W. Cushing[2] said: I desire to call to your attention certain changes in the uterine mucous membrane, with reference to the diagnosis of a class of cases which I have no doubt most of the gentlemen in active practice see repeatedly: An elderly woman, past the menopause, has intractable hæmorrhages, finally requiring curetting. After operation, for a few weeks there is some discharge, and the woman gets better. She goes three or four or five months, and the curetting has to be done again, and perhaps, after three or four months, again. Finally, some fine day, you find the uterus fixed immovably, the symptoms of cancer develop, and the woman eventually perishes. These cases can be recognized by microscopic examination of the mucous membrane at an early stage, before there is any infiltration of the broad ligament, and before there is any systemic infection, and while the uterus can yet be removed with a very good chance of recovery. If done in time, before the uterus becomes too much involved, it is not a particularly difficult operation — not so difficult as where there is a cancer of the cervix, which is very apt to involve a part of the vagina or of the floor of the pelvis. In the beginning, this condition is strictly limited to the uterine mucous membrane, does not go through the uterine wall, does not affect the broad ligament, and should be removed.

I may here remind you of the difference in the structure of the mucous membrane of the canal in the cervix and in the vaginal portion. The latter has a layer of flat epithelium, but the cervical canal, as well as the cavity of the corpus uteri, is lined with cylindrical epithelium, and is studded with glands, more or less deeply burrowing into the mucous membrane. Therefore, the epithelial covering of the vaginal portion and that of the cavity of the uterus are to be considered as distinct in their function. Although the glandular formation is much more abundant at the fundus, and the functions of the glands of the cervix and of the fundus are different, yet the whole cavity of the uterus can be compared to one great gland, to which these other little glands are branches. Epithelioma or flat-celled cancer has its home in the portio vaginalis, especially at the margin of a lacerated and everted cervical canal. The cervix itself is more liable to the invasion of a carcino-sarcoma or glandular cancer. The glandular development of the fundus is of a different order and function, and liable to adenoma and cylindrical-celled carcinoma. This is a picture from "Martin's Handbook" (Fig. 1), in which he shows diagrammatically at the top the mucous membrane (*m*) of

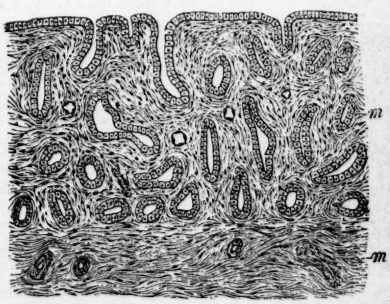

Fig. 1. — Normal mucous membrane of uterus, perpendicular section. *m*, Mucosa; m^1, muscularis (Orthmann).

the uterine body lined with cylindrical epithelium, and then the glands burrowing in every direction down to the thick muscular layer (m^1) of the uterus

[1] Concluded from page 287.

[2] Dr. Cushing's paper was illustrated by some forty photo-micrographs, projected on the screen by the stereopticon. As it is obviously impossible to reproduce these here, much of the paper, explanatory of the pictures, has been omitted. The outline here given is illustrated by the beautiful drawings of C. Ruge and Orthmann, from Martin's "Pathology and Therapeutics of Diseases of Women." These were also exhibited with the stereopticon and contrasted with the photo-micrographs made by Dr. Cushing from his specimens.

and in that way the whole cavity of the body of the uterus is surrounded by this mass of branching glands, with the normal amount of intercellular substance, an excess or diminution of which represents disease. Here in cross section (Fig. 2) you

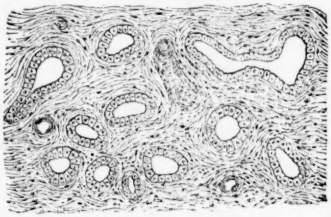

FIG. 2. — Normal uterine mucous membrane, cross-section (Hartnack, Oc. 2, Obj. 4). Orthmann.

see the normal amount of glands and interglandular substance. All glands are lined with the layer of cylindrical epithelium. Below these glands are the long nuclei of the muscular tissue of the uterus. In order to call attention to the diagnosis of adenoma, I shall have to show what we usually get by curetting in cases of endometritis. What we get by curetting when adenoma is present is usually enough to warrant us in doing the operation of extirpation. The photographs that I shall show to-night were made by me from sections kindly prepared by Dr. S. L. Nelson, Dr. C. W. Haddock, and Dr. F. L. Burt.

Where there is only a slight increase in the amount of intercellular tissue, there is not a very pronounced stage of endometritis. In other cases of the same character, which are farther from normal (Figs. 3 and 4), the glands are natural in their size; they are perfectly lined with cylindrical epithelium; they do not come close together; there is a wide space between them. The whole tissue is infiltrated and packed with little, small cells, which have wandered in through, and account for the symptoms and sufferings. This is seen better when highly magnified. There is no sign of the long myomatous cell nor of the connective tissue which should be found between the glands.

In other cases of endometritis the glands seem to be solid. There may be some confusion between these and the processes of cancer, but the glands are regular, while cancerous processes are irregular in outline. It is not to be considered that these were hollow glands, which have been filled up, but that they are sprouts which are rapidly growing, and, therefore, are solid. The interglandular tissue is filled with small inflammatory corpuscles. The glands in these cases may not possess their normal cylindrical epithelium. It is gone, and replaced by smaller cells. That is probably connected with

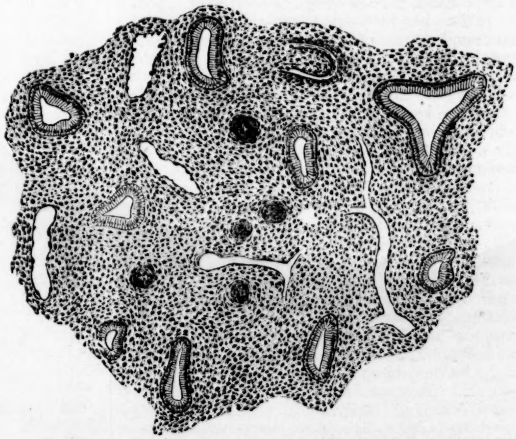

FIG. 4. — Interstitial Endometritis, cross section (250 times enlarged).

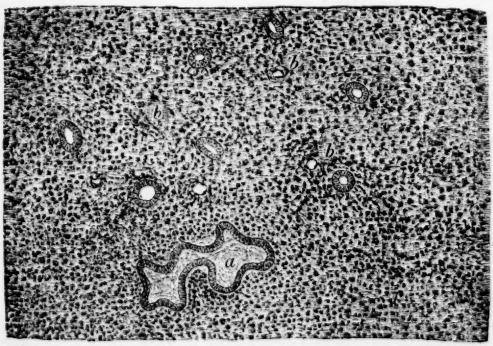

FIG. 3. — Interstitial Endometritis. *a*, Glands; *b*, vessels. (Orthmann.) Hartnack, Oc. 2, Obj. 4.

menstruation or with the inflammatory process, and is of no particular importance here. Another figure from Martin (Fig. 5) shows enlargement of the glands. In the same section there may be specimens of both the glandular and the interglandular enlargement (Fig. 6). The glands do not tend to come close together. They are separated by a fairly homogeneous tissue, which is present everywhere.

Now, both the glands and interglandular tissue may be increased so much that we shall have the same condition of folding that is seen in the brain, and we have the lining membrane rising in convolutions. That makes a fungous endometritis; but the fungous endometritis still remains just the same, even when it rises in the form of polypi.

It is entirely different from adenoma. In endometritis after abortion (Fig. 7), large numbers of large cells, similar to

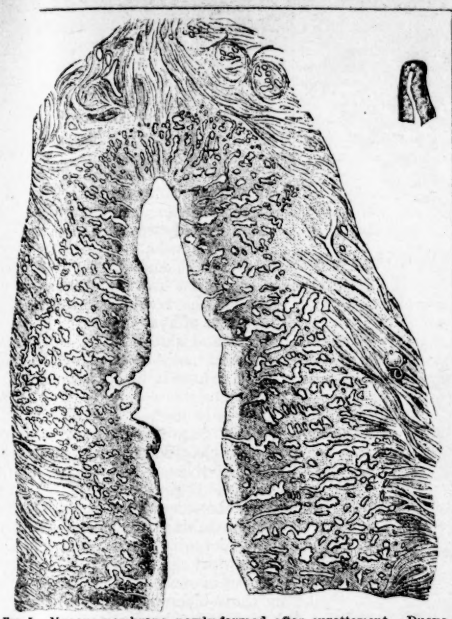

FIG. 5.— Mucous membrane, newly formed, after curettement. Duevelius, *loc, cit.* The small figure shows the natural size of the section.

those of a decidual membrane may be seen. These make all the different forms of endometritis. A section from a mucous polyp as large as the little finger, being a part of the general endometritis, shows that in its structure it is precisely like the curetting from the case of endometritis, and is not like the adenomas figured below. The distinction between the fungous endometritis and the adenoma is to be made accurately. Figs. 8 and 9 are plates from Martin, giving the general appearances of adenoma. I have contrasted them with the others, in order that you might see the difference as it appears in the books. You can compare it with the appearances as photographed from nature. The essential feature of an adenoma is the fact that it is all glands, with just enough interglandular substance to hold it together. What Schröder first described as adenoma is now called glandular endometritis or hyperplasia, and the present definition of adenoma uteri involves the multiplication of glands, with just enough substance to hold them together.

Here is a photograph from a case about which I was consulted by Dr. Welles, of Chelsea, giving this bit of tissue, and the glands running off on each side. There is almost nothing between the glands. There was repeated hæmorrhage, recurring in spite of curetting in an elderly woman.

This is from a case in the practice of Dr. C. W. Haddock, of Beverly, with the same history. It is third curetting. Is it malignant? Should it come out? It is malignant, although it is not technically a carcinoma. You might call it a villous cancer and come pretty near it. It is malignant, in that it will eventually destroy life. The glands arrange themselves into pockets or meshes. It does not need a great deal more change for that to become a cancer, for finally the growth of large cells which fill the glands will break through into the interglandular spaces, and then you will have a cancer.

This is a picture from a very interesting specimen from a woman sixty-eight years old. It is all glands, and just enough tissue between to hold it together, and that is all. The glands are perfect. They do not differ, as glands, from those which are seen in other healthy women. It is the right thing at the wrong time. It is unnatural for her to be having hæmorrhages, or to be having glandular

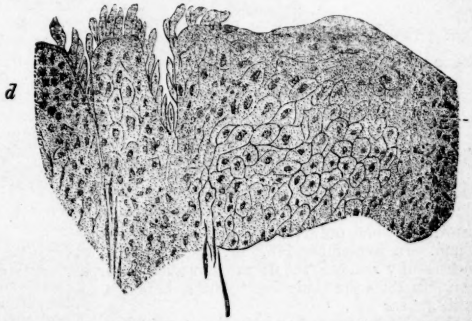

FIG. 7.— Endometritis after abortion (after Schröder). *d, d*, Decidual "islands."

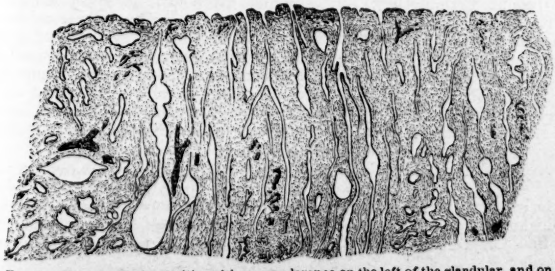

FIG. 6. — Fungous Endometritis, with preponderance on the left of the glandular, and on the right of the interstitial, form, according to C. Ruge.

growth in the uterus. To-day I extirpated the uterus, which I have here, and will show you. (For history of case and operation, *vide infra.*)

This is from another interesting case, the history of which has been published.[1] I suggested that it would probably come to hysterectomy. It was at that time considered by another authority that this was only a case of fungous endometritis, and that a hysterectomy would never be called for. Nevertheless it was called for after the fourth

[1] Annals of Gynæcology, Nov. 1887, p. 96.

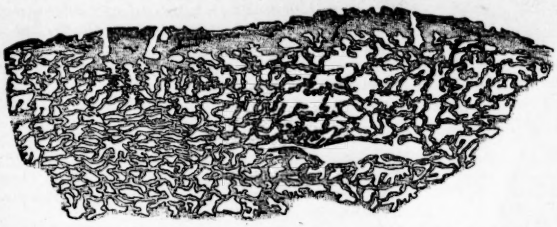

FIG. 8.—Adenoma of the uterus. Drawn by C. Ruge from one of Martin's specimens.

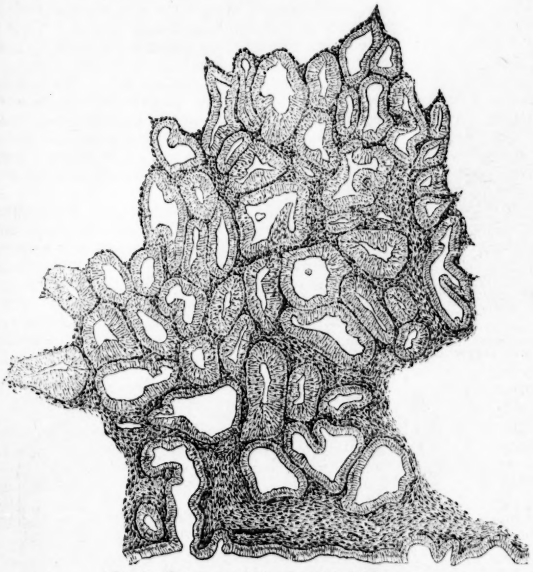

FIG. 9.—The above specimen magnified 400 times.

curetting, when only the shell of the uterus was sound. In September, 1887, Dr. Martin, of Berlin, successfully removed the uterus by vaginal extirpation. In 1885, the thing had begun to have a semi-solid appearance.

Here is a fine plate from Martin's work, showing the transition of hyperplastic glands into cancer of the corpus uteri. In the cervix I have not found such a change, but in the fundus I think the case is pretty well proven. Presently the basement membrane of the gland is broken through, and the cells grow into the intercellular substance, and they form large alveoli, with more or less traces of cylindrical cells. They pass right over from the condition of glands through that of adenoma to the solid masses of carcinoma. Of course, we must believe those who have found such changes to occur also in the cervix, even though we have not found them ourselves.

Another case is that of an elderly lady, where for several years there had been a history of uterine disease. It was called a cancer. She delayed and suffered, until now it is too late to do anything. The piece which I scraped out shows this picture. The uterus is large, it is partly fixed, and nobody would be willing to try to remove it. The thing is solid. There are large alveoli divided off with connective tissue, and in places you can find the cylindrical epithelium.

Another lady was curetted by me eight months ago. It was declared to be malignant. She was somewhat over sixty. She had had hæmorrhages. The alternative of hysterectomy was offered, and she thought that she would not. Presently she wanted to have it done, and then it was too late.

The only deduction I wish to draw from the foregoing is very simple. There are a good many of these elderly women who are beginning to flow, where the diagnosis could be made by taking a little pains, where a vaginal hysterectomy can be done with a very good prospect of success, where leaving them alone is going to be absolutely fatal. Vaginal hysterectomy here has not the disadvantages which it has in cases of cancer of the cervix, where the broad ligament is very apt to be infiltrated. The former has everything in its favor if done early enough.

UTERINE HÆMORRHAGES: CURETTING, FOLLOWED AT EACH OPERATION BY RELIEF; RECURRENCE; VAGINAL HYSTERECTOMY; CURE.

DR. F. L. BURT reported the following case:—

Mrs. X. is a widow of sixty-eight years, whose history of interest is as follows: The menses appeared at fifteen and one-half years, and continued till patient was fifty-two. There was considerable irregularity of periods before marriage, and as a girl she complained of dysmenorrhœal pains, but none since. She has given birth to seven children, since which period she has suffered three miscarriages. There is no history or evidence of any difficulty during accouchement, no lacerated cervix or ruptured perinæum, nor stated cause of miscarriage. Complains of considerable constipation and of some slight bladder trouble. There has been much very annoying vaginal discharge in the past, of late much less in quantity.

Up to the time of menopause, at fifty-two years, the flowing was considered to be normal, and the change of life was natural. There was cessation for five years, during which time she was perfectly healthy. Then flowing began by degrees and she

sought the advice of a surgeon. The uterus was curetted, this being ten years ago, with the result that she was much improved, and remained so for nine months following. At this time she was working very hard and brought on flowing of considerable amount. Rest improved her, and there followed a period of two years of comparative comfort. After another attack of hæmorrhage the same surgeon was again consulted, and the same operation repeated. No benefit followed, a fact for which she did not blame the operation, but rather that the after-treatment was not so satisfactory as after the first time. From this she went on from bad to worse, but would have periods when she would go two or even three months without very much suffering, but most of the time she could not keep about at all. During the following three years five physicians were consulted, and at their hands she received internal medication and injections with only temporary relief. Four years ago another Boston surgeon was consulted, and he advised and performed another curetting. A relief of between four and five months followed. Her case was then diagnosed as carcinoma, and the prognosis for life was only six months. Hæmorrhages still continued at intervals until the summer of 1887, when there was a considerable flow. Three months later, November 14, 1887, she entered the hospital seeking relief, although she had flowed scarcely any during this time.

Examination showed her condition to be extremely good, considering her past history. The vagina was found short, somewhat small in upper portion, the parts having atrophied to a degree. There was no cervix perceptible, and the vagina terminated at an opening large enough to admit a sound easily entering the uterus. Depth of uterus, using no force, about four and one-half inches. No hæmorrhage was noticed at time of examination, but instruments used internally would produce a show of blood no matter how carefully they might be handled. Although the symptoms were not momentarily urgent, the disease was considered far enough advanced to require operation for removal of the mucous membrane, and she was curetted November 17th. The curette passed easily into the cavity and to the depth above mentioned. Nothing but soft tissue could be felt on all sides, as if among masses of villous growths, a condition which can only be appreciated by feeling. The uterine walls were apparently very thin, and the curette moved about as if in a large, empty space. Only very slight force was necessary to remove the softened diseased tissues, but to those witnessing it, it seemed as if a very extraordinary amount of tissue was being removed. About three gills of débris was removed and only very little hæmorrhage followed. Uterus was irrigated, swabbed, and a little subsulphate of iron applied to cavity. An application of iodoform wool was made to vagina. No treatment except irrigation followed, and the recovery was perfect. Examination showed the disease to be adenoma. She left the hospital, enjoyed five months of comfort and freedom from hæmorrhages, when they again recurred, and she re-entered the hospital May 2nd, when the same operation was again performed with the same result, but this time there was found to be carcinomatous degeneration in some of the tissues removed. After recovering, the operation for total extirpation was advised and accepted, and performed by Dr. Cushing, June 13th, before a number of members of the State Society then in session.

The operation was essentially after Martin's method. The post cul-de-sac was opened, the peritoneal and mucous surfaces of the vagina being stitched through. The uterus could be drawn down only with great difficulty owing to extensive adhesion; these were next broken up by the fingers. The floor of the pelvis was then sewed firmly to the vagina on each side and separated from the uterus, hæmorrhage being controlled by ligatures, and for greater safety by forceps also. The uterus was then retroverted, and dragged down by Martin's hooks and vulsella. In spite of every care it tore badly, and a sponge was put above it into Douglas's pouch to prevent infection. Finally it was brought down and the broad ligament tied, clamped, and cut. One ovary was removed, the other was not seen. The cervix had already been separated from the anterior vagina, which was similarly stitched through to prevent hæmorrhage; the separation from the bladder was easily made and the whole removed, leaving five pairs of pressure forceps on the stumps of the broad ligaments and pelvic floor.

The field of operation was irrigated with a weak sublimate solution, the sponge removed, and patient put to bed. There was no shock nor hæmorrhage. The forceps secured excellent drainage and were removed on the third day. There was no interruption to an easy convalescence, and the patient left the hospital well on July 17th.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting held October 2nd, the President, Dr. Geo. W. Jacoby, in the chair.

Dr. B. Sachs presented three cases of

MUSCULAR DYSTROPHIES,

referred to in his paper before the American Neurological Association in Washington. The author referred to the relation between pseudo-muscular hypertrophy, and other forms of muscular dystrophies, particularly Erb's form. Erb had stated that the two were identical. Erb's juvenile form consisted in atrophy attacking the upper extremity, particularly the deltoids, the infraspinatus, and sometimes the latissimus, the lower extremity being intact. The question was whether pseudo-hypertrophy and Erb's atrophy were distinct or merging types.

Case 1 was twelve and a half years old. The child had suffered from severe fright at ten months. She had never walked well. She had diphtheria when four years old, and after this her gait had been worse. When six and a half years old increased size of the legs had been first noticed. The characteristic difficulty in getting up from the floor had been present. There was atrophy commencing in the palmar interossei, and affecting the arm and forearm. The thenar and hypothenar eminences had not been involved. There was hypertrophy of the whole lower extremity, but the hypertrophy of the legs had not kept pace with that of the thighs. It was apparent that atrophy

of the legs would soon supervene. The atrophy of the hands had not been present two years ago. The case proved that in the atrophy associated with pseudo-hypertrophy, it was not necessary that the shoulder should be first affected as in Erb's form. For the interossei to be attacked first was rare, but only proved that any muscle could be affected by the disease, while in Erb's form the hand was exempt to the last.

Case 2 was that of a boy of ten years. There was no history of heredity, and no constitutional taint. The patient was a newsboy. He had walked late, and had been treated for rickets. He had never been able to run, and had been always easily fatigued. The hypertrophy in this case was most marked in the thighs. A peculiarity of the case was the fact that the boy could rise from the floor without climbing upon himself as was customary in the disease, and considered by Gowers a differential test. There was some atrophy of the serratus anticus of the right side. The upper extremities were not affected.

DR. BIRDSALL suggested that the face had a peculiar appearance.

DR. SACHS had not referred to this peculiar puffiness, because, while suggestive, it was not sufficiently characteristic of the Landouzy-Déjerine type. It was possible that it might develop into this appearance.

Case 3 was that of a girl of twelve years. She had walked at nine months. At the age of ten months she had fallen, and later had had something the matter with the knee. This was treated with the plaster splint in St. Petersburg and recovered. The circumstance was mentioned because it had been denied that so young a child could be successfully treated with this instrument. At the age of three the child had measles, at four small-pox, at six scarlet fever, and at six and a half typhoid fever. The loss of power in the limbs was not preceded by fever or convulsions. Five months ago it was noticed that motion was impaired in the toes, there was a modified gait, fatigue and difficulty in mounting the stairs. There was no pain. There had been at times a creeping sensation in the skin, and once fibrillar contractions had been noted. The atrophy affected the right leg, thigh, and gluteal region. The electrical reactions were normal. For four months the knee-jerk had been absent upon both sides, but now it was exaggerated upon the left side, while upon the right side it was still absent. The gait was that of poliomyelitis affecting the anterior group, while the history was one of progressive muscular atrophy of the peroneal form. The gradual onset without convulsions or fever, and the progressive character of the affection, and the atrophy, which was not so profound, distinguished it from atrophies of spinal origin. On the other hand, however, the exaggerated knee-jerk suggested a substratum of spinal or neuro-spinal implication. The case was an anomalous one of a type seldom seen. The author made the diagnosis of peroneal form of progressive muscular atrophy.

DR BIRDSALL had been interested in the types shown, and was not inclined to question the doctor's diagnosis. The last case was, he thought, allied to the progressive muscular atrophy type, rather than to that of an acute poliomyelitis; he thought, however, that there might be grades between the two, that there was no sharp line of demarcation between them. The former presented the characters of a degeneration, while the latter was an acute inflammatory condition which might involve, not only the gray matter, but extend to the neighboring tracts. The speaker had a case in mind diagnosed acute inflammatory poliomyelitis. There was involvement of the muscles of the anterior and posterior aspects of the thigh, slight affection of the anterior tibial group, and exaggerated reflex, showing extension to the lateral column. In the speaker's opinion the different varieties of atrophy represented grades rather than distinct pathological entities. The fact that the atrophy in one case had affected an arm, a leg, in one was hemiplegic and in another paraplegic, should not blind one to the possibility that the pathological processes might be the same. In the present stage of our histological knowledge, he thought that we were not even able to separate cases into those of myopathic and myelopathic origin. The number of the cases was meagre, and our methods of examination were not calculated to reveal minor degrees of atrophy. In the muscles, nerves, and cord it might be possible to have a gradual destruction and regeneration going on, which would escape detection. The value of the electric reaction was equally open to doubt. If fibres degenerated one by one it was probable that the reaction would remain normal until the number of atrophied fibres had attained a certain grade. The degeneration reaction would be in any case interfered with by the normal reaction of the healthy fibres. The question was whether there was great uniformity in these various types, or great diversity; he predicted the latter, the types running into each other.

DR. PUTNAM JACOBI suggested that the gluteal muscles were unaffected in the second case presented. This accounted for the lack of the usual difficulty in getting up from the floor.

DR. SACHS accepted this explanation. He had referred to the point because Dr. Gowers had mentioned the symptom as pathognomonic.

DR. DANA referred to a case of pseudo-hypertrophy in which the disease had advanced from the calves to the thighs, and thence to the shoulder-girdle. There was slight hypertrophy of the forearm, the part said to be unaffected in Erb's form.

The fundamental distinction between the symptoms of chronic anterior poliomyelitis and progressive muscular atrophy, was the retrogressive or stationary character of the former, and the progressive character of the latter.

It was difficult to criticize the diagnosis in Dr. Sachs' last case. He would prefer to postpone his decision, but would suggest that a careful examination of the urine be made for lead. A number of cases of anterior poliomyelitis in children had been recently ascribed to lead.

DR. GRAY would, upon *à priori* reasoning, decide the case as one of chronic anterior poliomyelitis, but that anterior horn myelitis was, as had been suggested, retrogressive. Muscular atrophy could be, he thought, divided into that of spinal and peripheral origin; of the latter, however, we must distinguish between that arising in the muscles and that due to peripheral neuritis.

The results of treatment varied. There were cases which, with rest in bed, faradism, and gentle massage improved, while other cases were unaffected by treatment. He thought that the former were of spinal, while the lateral were peripheral, either neural or muscular in origin.

Formerly the diagnosis of a central or peripheral origin was determined by the presence or absence of the reaction of degeneration. Now confusion surrounded this test also. The doctor inquired in regard to opinion upon this point. Was the degeneration reaction present only where the muscles were degenerated?

Dr. Sachs closed the discussion. He was pleased that Dr. Birdsall, who had not heard his paper in Washington, had been in substantial agreement with it. While there was diversity of types, there was no anatomical distinction between pseudo-hypertrophy and atrophy. The primary and secondary affections were distinguished by their symptoms. The primary affection occurred early; there was absence of fibrillary contractions, and absence of the reaction of degeneration. This group included pseudo-hypertrophy, Erb's type, and that of Landouzy and Déjerine.

Dr. Gray begged to refer to a case recorded by Schultze, which had been assumed to be primary, but in which there had been found changes in the cord.

Dr. Sachs explained that the change referred to was independent and unconnected with the muscular symptoms. It was in a part of the cord unconnected with the muscular tract. He suggested that in Dr. Dana's case the atrophy in the left arm might have given rise to a fictitious appearance of hypertrophy in the forearm.

Dr. Dana added that the muscles had also the peculiar feel of pseudo-hypertrophy.

Dr. Sachs did not question the doctor's diagnosis. He believed that all present had agreed upon the desirability of getting rid of the present classification upon anatomical distribution of the hypertrophy or atrophy. He had retained the term peroneal form for convenience only.

Dr. M. D. Field followed with a paper entitled

OTHÆMATOMA, OR INSANE EAR.

The title referred to a shrunken, shrivelled condition, preceded by a period of active congestion during which the organ was swollen, hot, and very painful. Between the cartilage and the perichondrium there was effused a sero-sanguinolent fluid, which might become purulent. This was absorbed, or rupture occurred with healing and the deformity described. The deformity was not uncommon among the insane. It had been attributed to trophic change. The most general opinion had been that othæmatoma was characteristic only of chronic cases, and usually indicated an incurable condition.

The question of a traumatic origin had received some attention. It had been remarked that a Greek statue represented a boxer with this deformity. The author could not recall the reference. It had been said to result in boys, from the violence of a game of football. It had also been observed among soldiers.

The author had had under his care the case of a professional pugilist who had presented the deformity in question. Upon directing his attention to it, the man had remarked that it had resulted from a blow upon the head, and that it was common in his profession, that he knew as many as a hundred men similarly injured. Arrangements were made with this man to be present at the meeting. He had been unable to come, but had sent substitutes. Several undersized, meek-looking, professional men, pugilists, here appeared, all presenting the deformity. It could be added that only one had ever been in an asylum. This one had been in for delirium tremens. It was evident that the insane ear could proceed from traumatism, also that it was more common than was commonly supposed.

Dr. Peterson felt indebted to Dr. Field for the opportunity of examining the cases. He had seen the condition frequently in the insane, and believed that it was always due to traumatism. It was more frequent among the insane, probably on account of the necessity for restraint, also because the insane were apt to injure themselves in many ways. He also believed that the changes in the walls of the vessels in insanity predisposed to the result. Retrograde metamorphosis of the cartilage and perichondrium, like that of senility, was common in general paresis and other varieties of chronic insanity.

Dr. Parsons exhibited a cast of othæmatoma in the recent state, taken some years ago. He had always considered the condition a result of nerve degeneration. The exhibition this evening had, however, demonstrated that it could result from traumatism alone.

Dr. Douglas had seen a considerable number of instances of the insane ear, and thought that it had been due to violence in every instance, either from the attendants, other patients, or the sufferer himself.

Dr. Ingram could corroborate this statement. The insane had the habit of rubbing the ears, which might account for some cases. He could add to Dr. Field's record that of a case of recovery after double othæmatoma during an active maniacal attack. With improvement of the mental condition there was improvement in the ear. Upon recovery there was diminution in the size of the ear, but no deformity.

Dr. Peterson added that the reference to the Greek statue had been by Fuerstner, *Arch. f. Psych.*, iii.

Dr. Field, in closing the discussion, referred to the case reported by Dr. Hun. After the patient had been struck with a broomstick, the hematoma appeared upon the opposite ear. Dr. Hun cited the case as an instance in which traumatism could not have been the direct cause.

Meeting held Tuesday evening, November 6th.

Dr. W. H. Thomsen read a paper entitled

PARENCHYMATOUS NEURITIS,

including the history of a number of cases.

Case I. was that of a man of fifty-six years, formerly engaged in the lumber business, and obliged to stand in water containing floating ice for hours at a time. This patient's symptoms had first

pointed to central spinal trouble, but later had been those of a multiple neuritis. They had, however, been gradual in their onset, and there had been no evidences of pressure. There had been no shooting nor lancinating pains. The actual cautery had been applied over the spine, and the hot glass rod over the sensitive nerve trunks. Nitro-glycerine had given the greatest relief from pain in this case.

Case II. was that of a man of thirty-five years, convalescing from diphtheria. There was no pain, but the laryngeal and pharyngeal paralysis was so profound that the general health suffered.

Case III. was that of a boy convalescing from typhoid fever. There were pains in the legs and feet, with dropping of the feet.

Case IV. was that of a woman confined to her bed for three months in the course of phthisis. There were pains in this case in the feet, extending to the knees, and in the hands, with dropping of the ankles and wrists, which progressed steadily till death, when extensive nerve degeneration was found, without any evidences of inflammatory action. The case was presented as a typical example of a wide-spread, non-inflammatory degeneration of the nerves. It was a parenchymatous neuritis analogous to that which could be produced by a ligature. The origin and history differed from that of an inflammatory neuritis, however much it might resemble this condition in its ultimate results. In the case of typhoid fever and phthisis the degeneration may have been due to a mechanical cause — pressure from the loss of the surrounding fat. The fact that the vagus was implicated in the latter disease did not disprove the theory, as no statement had been advanced in regard to the condition of the bronchial glands.

The theory of a non-inflammatory parenchymatous nerve degeneration was important, as the treatment of such cases would differ from that of cases of inflammatory origin. In the latter antiphlogistic and soothing treatment was indicated, while in the former stimulating applications were required.

It was questionable whether the term neuritis could be correctly applied to this type of the disease.

DR. L. C. GRAY had not heard the commencement of the paper, and did not understand why Dr. Thomsen objected to the term neuritis. He thought that the symptoms could be scarcely classed under any other name. There had been, as he understood, downright pain in the course of the nerves, and eventually paralysis and atrophy. These were the clinical symptoms of neuritis, and measured the severity of the neuritic lesion.

The treatment of neuritis was, he believed, excepting traumatic neuritis, still *sub judice*. Since attention had been called to the disease, all had probably met with cases in which no local measures seemed to do any good. Quinine, the salicylates, and iron had been most beneficial in his own cases. Change of air was to be recommended. Even in the paralytic stage it was his custom to move the patient to another part of the city, or even from a lower floor to a higher floor in the house. Change of location was especially indicated in the cases arising in our somewhat malarial suburbs.

DR. STARR applied powdered menthol diluted with starch under a flannel bandage for the relief of the pains of neuritis.

DR. JACOBY did not find the diagnosis of neuritis so easy as Dr. Thomsen had represented it, especially in typhoid fever. Myositis was a more probable lesion in typhoid fever. Zenker had even stated that neuritis was never found in this disease. As to the distinction made between the inflammatory and degenerative process, both might be found in the same case. Which process was primary, and which secondary, was still a question.

DR. THOMSEN closed the discussion. He had intended to call attention to only a single point, and necessarily had neglected many others touched upon by the gentlemen in the discussion. He had intended to call attention simply to the impropriety of the term neuritis, as applied to the process in the cases which he had described. There was no reason to suppose that the process in the case of phthisis had been inflammatory. The inflammatory process had certain definite characteristics. These were vascular disturbance, infiltration with serum, and leucocytes or living matter. In the neuritis of alcoholism, both in private and in hospital practice, he had observed circulatory and nutritive changes; there had been the same tendency as in the inflammatory processes in other parts of the body. There was evidently inflammation of the sheath of Schwann, and constriction of the nerve. These conditions contrasted with those in the cases which he had described. In the treatment of true neuritis he had used an application of equal parts of the oil of peppermint and olive oil, a preparation similar in action to that which Dr. Starr had recommended.

DR. GRAY enquired whether Dr. Thomsen recognized no inflammatory process within the sheath of Schwann.

DR. THOMSEN replied that he knew of no changes within the sheath of Schwann which could be called inflammatory.

AMERICAN PUBLIC HEALTH ASSOCIATION,

MILWAUKEE, WISCONSIN, NOVEMBER 21, 1888.

SECOND DAY. — AFTERNOON SESSION.

BEFORE the opening of the afternoon session the members of the Association were conveyed in carriages along the beautiful lake drive to the station of the new flushing tunnel, which has been devised to create a current in the sluggish waters of the Milwaukee river. By means of a screw revolving in this tunnel, about five hundred million gallons of the lake water can be forced into the river daily, thus acting as a purifying current to wash the sewage of the city out into Lake Michigan. How long the rapidly increasing cities of the western lakes can safely pour their sewage into these basins, and at the same time use them as water-supplies, is an important sanitary question.

At some distance north of the flushing station, the water-works were visited. The supply of water to Milwaukee is unusually liberal, amounting to about one hundred and twenty-five gallons daily to each inhabitant. For greater security it is intended to extend the crib, or intake, a mile

or more out into the lake, after the manner now being adopted at Chicago.

On returning to the hall, the remainder of the afternoon was occupied with a detailed account of the methods adopted for conducting the quarantine stations at Quebec, New Orleans, and Boston. These papers were presented by Dr. F. Montizambert, the quarantine officer at Quebec, Dr. L. N. Salomon, the Secretary of the State Board of Health of Louisiana, and Dr. S. H. Durgin, chairman of the Board of Health of Boston.

Dr. Montizambert's paper was amply illustrated with stereoscopic views of the station at Grosse Isle, below Quebec, and of the appliances there employed for disinfecting ships and their cargoes.

Dr. L. S. Kilvington, of Minneapolis, read an instructive paper upon

GARBAGE FURNACES AND THE DESTRUCTION OF ORGANIC MATTER BY FIRE,

in which he gave at first a historical account of the subject of garbage cremation, including the results of experiments in England, and the principal establishments now in operation in the United States and Canada. These are principally at Chicago, Des Moines, Minneapolis, Pittsburg, Wheeling, Montreal, and at Coney Island, and are constructed upon different principles.

The furnace in use at Minneapolis is an Engel crematory, consisting of an elongated chamber of fire-brick, having an upper and lower grate, the garbage being dumped upon this upper grate through openings in the top of the furnace. Fires are built at each end of the mass, and by means of valves the fire can be conducted either over, or under, or between the grates in such manner as to thoroughly burn the garbage deposited in the furnace.

(On the following day a similar furnace was completed at Milwaukee, and was visited and examined by the members of the Association while it was in operation for the first time.)

Dr. De Wolf, health officer of Chicago, referred briefly to the operation of the new crematory at Chicago, stating that its work was thoroughly done, that he believed that better work might be accomplished, from an economical standpoint, by an apparatus which would return a portion of the material, as a product of definite value, in return for the cost of management.

Dr. Clarke, health officer of Buffalo, stated that such a plant was maintained in that city, consisting of a driver, or separator, in which the valuable parts of the garbage, chiefly the oil, were extracted, and were sufficient to pay the cost of fuel and maintenance.

In other cities the cost of cremating garbage varied from fifteen to twenty-four cents per ton.

In the evening a hospitable reception was given to the Association at the Athenæum, by the Women's Club of Milwaukee.

THIRD DAY, THURSDAY, NOVEMBER 22.

The morning session was mainly devoted to a consideration of yellow fever and its sanitary management and prevention.

The first paper, by Dr. A. N. Bell, of New York, treated mainly of the experience of the writer in earlier years with this disease in tropical climates.

Dr. Rutherford, health officer of Texas, gave a historical sketch of yellow fever as it had prevailed in that State, followed by an account of the measures which he had taken to prevent its introduction into Texas, either from other States of the Union or from places beyond their limits.

Decidedly one of the best papers presented at this meeting of the Association was that of Dr. Jerome Cochran, of Mobile, Ala., entitled

PROBLEMS OF YELLOW FEVER EPIDEMICS.

The paper was comprehensive, intelligible, and well suited to the occasion. The writer considered the sanitary management of yellow fever to be one of the most important questions affecting the interests of the Southern States. The conveyance of the specific poison of the disease is now more readily facilitated by the rapidity of railroad travel, by which distances are abolished, and the interior brought down to the sea-coast. Yellow fever may find an abiding home in Southern Florida.

As results of extended personal observation, Dr. Cochran believes that the pathogenic principle of yellow fever is propagated both in the body and in its environment; that it does not enter by the skin or lungs, but by the alimentary canal, and probably through the mucous membranes of the mouth and pharynx; that it passes out by means of the dejections; that a ptomaine generated by these micro-organisms in the alimentary canal is the direct source of the disease; that it resembles typhoid fever and cholera in its method of transmission; that it infects localities; that it does not ordinarily spread from single cases, and not often from two or three cases; that human intercourse is its greatest factor; that it is not ordinarily transmissible by air currents, nor over high walls; that it is more communicable by night than by day; that in infected places all become infected, but not all are susceptible to the disease; that whites are more susceptible than blacks, and men more than women.

With reference to its sanitary management, density of population is an important element, and makes its management more complex and difficult. The golden rule must be *non-intercourse and isolation*. For the purpose of disinfection, Dr. Cochran recommends heat, bichloride of mercury, and sulphur fumigation, and believes that the dejecta should be disinfected. With reference to depopulation, he thought its disadvantages outweighed the advantages, and condemned refugee camps as failures, which were good in theory, but bad in practice. Thoroughly equipped health departments were commended, as the most efficient preventives both of disease and of panic.

Col. D. P. Hadden, of Memphis, Tenn., heartily approved Dr. Cochran's paper, and urged its publication. He also commended the efforts of the association in its attempts to bring before Congress the necessity of a national sanitary organization. He gave a humorous account of the recent panic at Memphis on account of a supposed case of yellow fever.

Dr H. F. Hoyt, of St. Paul, Minn., gave an account of the methods adopted in that city for general sanitation, especially with reference to the disposal of sewage and offal.

PROF. W. W. PAYNE, director of the observatory at Northfield, Minn., presented a paper entitled

METEOROLOGICAL OBSERVATIONS RESPECTING DISEASE PREVALENCE,

urging the importance of co-operation between signal offices and sanitary organizations, and a more careful study of the relations of weather conditions to health.

EVENING SESSION, NOVEMBER 22.

Papers were read by DRS. D. E. SALMON and THEOBALD SMITH, of the Bureau of Animal Industry at Washington, D. C. The first on

TUBERCULOSIS: ITS ORIGIN, DETECTION, AND CONTROL,

and the second on

THE ORIGIN AND SOURCES OF DISEASE GERMS IN GENERAL.

Both papers were fully illustrated by the stereopticon.

MR. DANIEL DOTY, of Pullman, Illinois, followed with an entertaining description of that remarkable industrial city, having especial reference to the sanitary features which it presents, such as its ventilated workshops, its method of sewage-disposal, its well-planned tenement houses, and many other excellent features of similar character, many of which the writer verified by personal inspection on the following day.

The chairman then announced that the Lomb prize, for the best essay on hygienic cooking, had been awarded by the committee to Mrs. John J. Abel of Strasburg, Germany, for an essay entitled "Five food products, illustrated by practical receipts."

FOURTH DAY. FRIDAY MORNING, NOV. 23.

The last day's session was mainly for the transaction of routine business. The following papers were read by title:—

"Hygiene of the Eye and Ear," by Dr. J. Felton, of St. Paul, Minn.

"Difficulties and Successes of Public Health Service in Large Cities," by Dr. O. C. De Wolf, of Chicago, Ill.

"Organization of a National Health Service," by Dr. S. W. Latta, of Trenton, N. J.

It was voted to hold the next meeting at Brooklyn, N. Y. The following officers were elected for the ensuing year:—

President, Dr. H. A. Johnson of Chicago, Ill.; first vice-president, Dr. J. Cochran, of Mobile, Ala.; second vice-president, Dr. T. Montizambert, of Quebec; secretary, Dr. J. A. Watson, of Concord, N. H.; treasurer, Dr. J. B. Lindsley, of Nashville, Tenn.

A vote of thanks was tendered to the Women's Club of Milwaukee, in recognition of their courteous attention and hospitality to the Association.

—Dr. J. Adams Allen has presented to the Presbyterian Hospital of the city of Chicago his medical library, one of the most valuable in the Northwest, containing some 2,000 volumes, which have been selected with great care. The Board of Managers will make provision for its accommodation in the elegant new fireproof building now nearing completion on the corner of Wood and Congress streets.

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THURSDAY, DECEMBER 13, 1888.

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MOVEMENTS OF THE STOMACH.

PHYSIOLOGISTS have long taught the existence of certain peristaltic movements of the stomach which go on during digestion, and have for their object to agitate the alimentary mass and impregnate it with gastric juice, as well as to expel the chyme. Leven even affirms that these movements go on during fasting, though more active during the digestive process. Much, moreover, has been learned of late years with respect to the effects of atony of the muscular coat,—an atony, the advanced stage of which constitutes gastrectasia with its formidable array of dyspeptic symptoms.

The older physiologists taught that the chemical activity of the stomach is in intimate correlation with the muscular activity, the secretion of gastric juice being the more abundant the more completely all parts of the stomach are brought in contact with the alimentary bolus, the latter reflexly stimulating this secretion. This as a general rule is undoubtedly true, being in accordance both with known laws and careful observations, such as those of Beaumont on Alexis St. Martin.

It is true that some recent physiologists have inverted the process, and claimed that the energy of the movements of the stomach is closely related to the richness in acid of its contents. To test this, Klemperer, who recently addressed the Society of Internal Medicine of Berlin,[1] "On the Motor Functions of the Stomach," has experimented with alkalies, as magnesia, a sufficient quantity of which was introduced into the stomach to neutralize every trace of acid; in these conditions the movements of that organ were found just as energetic as ever. These were, however, healthy subjects, and it would be interesting to note in such subjects the effects of a continuance of these experiments. Certain it is that in another series of experiments,

on thirteen patients affected with gastric catarrh, Klemperer noticed that with a diminution of hydrochloric acid and an augmentation of mucus there was a notable diminution in the movements of the stomach. It is probable that the view of Ewald expressed at the same meeting is the correct one, that all the functions of the stomach — secretory, motor, absorbent — constitute a unity or solidarity; that no one of these functions taken separately has the principal part either in the physiological or pathological processes of the organ, while derangement of any one of them sooner or later breaks the harmony and results in disease.

In Klemperer's experiments he made use of olive oil. It is known that a neutral fat is decomposed at the end of one or two hours in the stomach, and furnishes sebacic acids. By an œsophageal sound Klemperer introduces one hundred grammes of olive oil into the stomach of his subject. At the end of two hours he aspirates the contents of the stomach (injecting in a little warm water to aid the process); the oil is separated by ether and weighed. In this manner he determines the quantity of oil which in two hours has passed into the intestine, and in repeating the experiment on a great number of subjects he has a basis for a comparative estimate of the rapidity of the gastric peristalsis. In this way he has found that certain neuroses are accompanied by a pronounced motor enfeeblement; that in chronic gastritis and in cancer there is, as a rule, a similar enfeeblement; that alcohol in moderate quantities, and certain bitters, as quassia and strychnine, and not unfrequently alkalies, as bicarbonate of soda and Vichy and Carlsbad waters, have a favorable influence on the motor activity of the stomach.

Another question which had not been definitely solved is whether the pylorus opens and shuts alternately on the solid contents of the stomach, so that the latter pass little by little by fragments into the intestine, as Beaumont and subsequent experimenters have taught, or whether they pass in a mass and all at once. Klemperer's experiments seem to favor the latter hypothesis, though in contradiction to the observations of Leven and others.

At the meeting above alluded to, all the speakers agreed in attributing to alcohol, when taken in excess, the property of arresting the peristaltic movements of the stomach; it also suspends the secretion of gastric juice. Acute febrile attacks, mucous catarrh, etc., do the same thing. It was moreover agreed that an excess of hydrochloric acid in the stomach also slows the peristaltic movements and the passage of the contents of the stomach into the duodenum, whether by determining an energetic contraction of the pylorus, as Rosenheim supposes, or by some other mechanism. Rosenheim was inclined to think that what is true for hydrochloric acid is also true for the organic acids, and he suggested that in Klemperer's experiments the fatty acids of the oil may have acted in the same way on the pylorus. He would explain in this way, and not by a diminution of motor force, a great number of cases of retarded peristalsis noticed by Klemperer.

In the discussion, attention was called to the fact that a normal state of the chemical activity (gastric juice secretion) and the motor activity do not always go together, it being proved that, in both the normal and pathological state, aliments may pass into the intestine and be digested without having undergone any transformation in the stomach; this passage into the intestine takes place only in virtue of the mechanical movements of the stomach. Allusion was also made to that augmentation of peristalsis which characterizes certain morbid conditions, as boulimia, where the stomach is found empty within an hour or two after the ingestion of a full meal. This acceleration of the peristaltic movements of the stomach is generally associated with some hyper-excitation of the nervous system.

SECONDARY DEMENTIA.

In his presidential address before the British Medico-psychological Association this year, Dr. J. S. Clouston gave the results of his long experience and close clinical observation upon a subject of vast importance to society, namely, secondary dementia, which he considers the end to which all kinds of mental disease tend. Indeed, he defines mental disease as a tendency to dementia. He finds 22 per cent. of the inmates of insane asylums to be cases of pure uncomplicated dementia, 28 per cent. secondary dementia complicated with maniacal symptoms, 16 per cent. congenital and epileptic dements, or 66 per cent. in all. The typical examples of secondary dementia were nearly all primarily cases of insanity of adolescence, and out of one hundred new cases sent to asylums about forty sink into dementia.

Dr. Clouston differs with many Continental, especially German, writers in regarding his pure cases of dementia as primarily due to a failure in the dynamical mind-evolving function of the cortex of the brain, to which the final atrophic and degenerative cortical lesions owe their origin, rather than to a failure in the nutritional and reparative power of the brain. Beginning with brain-health, implying fairly sound mind, normal sensibility and inhibition, good morals, stable motor functions, and a good trophic and organic state, he finds the initial de-

parture from this when a man and woman marry whose nervous developments on the whole are more marked than the trophic, commonly as follows: —

1. Extra mental activity, irritability, sleeplessness, and want of fat.

2. Hypersensitiveness, pronounced manners, strong artistic and poetic feeling, reproductive *nisus* strong and uncontrollable in youth, acute emotional religiousness, thinness of habit and premature senility preceded by hypochondriasis and mental inactivity.

3. Eccentricity, fitful brilliance, instability, hysteria, neuralgia, and asceticism in the women, drunkenness in the men, with few children and early dotage in both sexes. The so-called neuropathic diathesis or *neurosis insana* has begun, and more than this, for sporadic cases of epilepsy appear in this generation. This is the stage of "moral insanity" too.

4. The fourth step in the descent takes us to the first commonly recognized insanity, melancholia, with mental breakdown in the climacteric — a true reversion to a law of nature, very prevalent, that when reproductive power ceases death occurs.

5. *Folie circulaire* and maniacal attacks. The normal stability of brain-working has so disappeared that the periodicity of nervous and mental action have become exaggerated into a marked disease, the chief characteristic of which is that the individual leads two or three lives, is almost two or three distinct personalities, according to the phase of nervous action he is in. The curable insanities of full development occur here, namely, puerperal, lactational, and such like insanities. Secondary dementia does not readily supervene after these — in only 25 per cent., — and when it does occur it is incomplete and complicated. When the insanities of this stage become incurable, they tend to become chronic delusional states rather than pure dementia.

6. The last phase is that of being subject to severe developmental nervous diseases of all sorts, epilepsy, chorea, bad hysteria, and, above all, adolescent insanity, ending after a few periodic recoveries in secondary dementia, nature's typical mode of bringing a mentally bad stock to an end. All the great functions and organs are liable to characteristic diseases in adolescence, but when it is mental tissue whose function succumbs at that time of life, it can have only one meaning. The stock has exhausted its inherent hereditarily energizing vigor in that which distinguishes man from all else in creation, high mentalization.

Pathologically, Dr. Clouston says that all brains may be upset in their mental working by certain poisons, but that few can be thrown into secondary dementia. For its production an original tendency is necessary. We must fall back on the original qualities of the cortex-protoplasm as derived from ancestry, just as we have to fall back on this to explain why the dog's cortex develops in a year and dies in ten. The brain cortex of two generations of men and women can carry insanity as to mere potentiality from a great-grandfather to his great-grandchildren, with no sign of it in the children and grandchildren!

This is a side of the question too often neglected and well worth careful study; but a less depressing view comes from looking upon the various forms of insanity as definite diseases, like pulmonary consumption and certain fevers, in which heredity plays only one part. Like his predecessor, Skae, Dr. Clouston seems to us to incline too exclusively to the developmental or metaphysical basis of insanity, and not to regard it sufficiently as disease engrafted, as the case may be, upon a sound or an unsound brain.

His prophylaxis as regards marriage must have some practical difficulties in old communities where few families can go back two or three generations without finding cases of insanity; but so far as our patients are concerned, that is undoubtedly the safer side for error when we are consulted as to marrying. Over-education, lack of sufficient brain stimulus, too sudden adaptation to new environments and new conditions, as causes, and physiological modes of training, out-door life and selection of suitable employments as preventives, are insisted upon with Dr. Clouston's usual clearness and force.

MEDICAL NOTES.

— A new building has been erected in connection with the German Hospital on 77th street and 4th avenue, New York.

— Dr. F. N. Otis, who for a long time has been on the staff of visiting surgeons of the Charity Hospital on Blackwell's Island, resigned that place, and was appointed consulting surgeon of the hospital.

— At the meeting of the trustees of the University of Pennsylvania, December 4th, the resignation of Dr. D. Hayes Agnew from the chair of Surgery, to take effect at the end of the current session, was accepted with expressions of regret, as was also the resignation of Prof. William Osler from the chair of Clinical Medicine. John Ashhurst, Jr., the present professor of Clinical Surgery, was nominated for the position to be vacated by Dr. Agnew's resignation.

— The epidemic of typhoid fever, which became noticeable in Providence, R. I., in the latter part of November has now assumed increased proportions, and cases are reported to Superintendent of Health

Chapin from all over the city. No part of the municipality seems clear of the disease. Up to December 6th one hundred and fifty cases had been reported, of which number no less than eighty-one have been reported within a week, or more than twenty a day. The disease is ascribed to the Pawtuxet river, from which source the city takes its supply of water. The pumping station is at Sockanossett, in the town of Cranston, about four miles from the city. Below the pumping station there are but one or two mills, and both are small, so that the stream is comparatively clear of any pollution, either from mills or houses; but above the pumping station there are cotton and woollen mills, dyehouses, and several well-populated villages, the houses in many of the latter being on either side of the stream. The mills have been in the habit, not only of discharging scourings, greasy water, and dyestuffs into the river, but they have maintained privies along and overhanging the river, and the villagers have been using vaults that have emptied into the stream.

It is said that there is typhoid fever among the French-Canadians living in the factory villages along the Pawtuxet, who have been in the habit of depositing fæcal matter from the typhoid-fever-stricken patients in the river.

—The *Medical Press and Circular* notes a case, recorded by Diamant, of a young child who began to menstruate regularly from the age of two years. The menses have taken place up to a short time ago without intermission, and last for five days. The child was born in 1882, and at the end of twelve months had cut all its teeth. In 1886 it weighed fifty-nine pounds, and now in its sixth year it weighs seventy-nine. Till a short time ago it was robust and well. The head and upper extremities are similar to children of its age, but the buttocks and thighs are remarkably developed. The breasts are prominent, and the pubes and axillæ are furnished with hair. The child speaks in a bass voice. Up to January of the current year the health of the child continued good, but since then menstruation has ceased; at each menstrual period the child is seized with epileptiform attacks, and the latter have tended to become more serious both in number and severity.

—Superintendent Weir, of the Bureau of Police of Pittsburg, Pa., has received one of the medicine chests which are to be placed in each of the patrol wagons. They will be placed under the seat of the wagons, and will be carried at all times.

The interior is arranged very neatly, and there are compartments for the following articles. One bottle aromatic spirits of ammonia, one bottle of brandy, one box of mustard, marked "for poisons," one box of bicarbonate of soda, marked "for burns," spools of adhesive plaster, large roll of adhesive plaster, patent lint, antiseptic gauze, splints, bandages, pillow, tourniquet or rubber strap, blanket, and absorbent cotton.

It is expected that the rest of the boxes will be ready for distribution in a few days, and then, the officials think, the value of the patrol wagon when called to the scenes of accidents will be increased considerably. The manuals issued by the police surgeon a short time ago have proven of great value, and nearly every officer has acquainted himself with the proper treatment to give to an injured person.

—The Board of Health of Cleveland, Ohio, is taking energetic steps to put a stop to the use of impure ice in that city, of which there has been much complaint.

—The female medical students of Edinburgh, at least some of them, think they know their rights; so thinking "dare maintain" them. Two young women were dropped from the school of medicine without reason assigned, and have consulted a solicitor, who was informed by the dean that the expulsion was for staying in a hospital later than 5 P. M., when the rules require them to go. They said they stayed to see an "accident," and have sued the medical school for £500 damages.

—Dr. Joseph Warrington, who died at the age of eighty-three years in Moorestown, N. J., recently, was, before he gave up his practice in 1875, one of the most distinguished physicians in Philadelphia. He was one of the founders of the Philadelphia County Medical Society, and of the State Medical Society of the State of Pennsylvania, and he was delegated by the Philadelphia Medical Society one of its representatives to organize the American Medical Association at a meeting called for that purpose in New York city.

Dr. Warrington was the founder of an obstetric institute, now called the Lying-in and Nurse Society," in 1839, the home of which is located at Eleventh and Cherry streets, and he was one of the original charter members of the Philadelphia Lying-in Charity, in 1832, in which he established a lectureship.

—The following edifying advice was very recently given by a Methodist Episcopal doctor of divinity to the graduating class of an eclectic medical school as an accompaniment of the diplomas. He advised the young doctors to keep their shelves filled with

good, new books, even though they might not get time to read them, not only for the inspiring effect upon themselves of looking at the backs, but for the effect on people who happened to drop into their offices.

As a bit of parting advice he urged them to beware how they admitted ministers of the Gospel into sick-rooms, as ministers, the devil, and the undertakers all wear long, black coats, and generally have a depressing effect on the sick. The minister's work, he thought, was with the living, and not with the dying, except in rare instances.

—The Philadelphia Crematorium advertised in the daily press for bodies to incinerate. The secretary of the corporation is thus reported in explanation: We are advertising because we want business. We have made a rather heavy investment in this property. It is there, ready for business, and we want the public to know it. We have a fixed price of $50 for the incineration of a body. We cremated the first body on May 1st of this year. It was that of a well-known Spiritualist. Since then we have burned thirteen more bodies, four of which were Spiritualists while in the flesh. We have had no Catholic remains to dispose of yet. There are about one hundred and seventy-five shareholders, most of whom believe in cremation. For the $50 charged we burn the body and furnish a tin can as a receptacle for the ashes of the consumed body. We keep the coffins in which the remains are brought to us, and destroy them by breaking them up and burning them.

NEW YORK.

— At a meeting of the Academy of Medicine held December 6th, Dr. James R. Leaming read a paper on "Acoustics Applied to the Human Chest in Physical Diagnosis," and the following officers were nominated: president, Dr. A. L. Loomis; vice-presidents, Drs. E. G. Janeway, Francis Delafield, and D. B. St. John Roosa; recording secretaries, Drs. Jacobus and Hepburn; corresponding secretaries, Drs. Starr, Kinnicutt, and Garrigues; treasurers, Drs. Cushman, Lewis, and O. B. Douglas; trustees, Drs. Jacobi, Janvrin, Knapp, Noyes, and Lawrence Johnson.

— Dr. Robert H. Sabin, a prominent physician of West Troy, died December 4th. He was a highly esteemed fellow of the New York State Medical Association from its organization, and always took an active part in its annual sessions, as well as in the meetings of the branch association to which he belonged. His contributions, whether in the form of separate papers or of discussions, were full of practical value, and showed a large and varied experience.

Correspondence.

A JAPANESE HIS OWN SURGEON.

TOKIO, November 13, 1888.

MR. EDITOR: — I enclose a letter from a young army surgeon, twenty-two years old and just out of the medical school, which strikes me as good in its way. I never heard of another such a case, except that of the traditional Western trapper who amputated his leg with a bowie and a wood-saw, and cauterized the stump with a poker. I believe Mark Twain is the authority for the tale. I cross out irrelevant matter, in case you think the letter is worth publishing.

The last word —*itai*— is literally "pain," just equivalent to "Oh weh!" as used by children.

Very truly yours,

B.

TOKIO, 4. 10. 21.

MY DEAR SIR: — I have received your note to-day. It was addressed to the Military Hospital, and now I do not go there. So it came to my hand so late. Namely I had since some years a mild form of prolapsus recti — the protrusion of a ring of mucous membrane through the anus. It became suddenly very worse since about two weeks, probably because I have to stand up very long in the military manner. It became so bad that I could not go to the hospital, and I made mind to have operated. The day before yesterday (the 2nd inst) I called a practising physician of my neighborhood to my house, and I operated my anus myself with cocain and mirror. I burnt five good-sized folds of mucous membrane with the thermo-cautery, and am taking opium internally to avoid the passage of the dirt through the anus. To-day my pain is nearly gone. But I am not able to go out for a week or ten days more. I been in bed at my house. Hoping to see you at any rate very soon. Yours very truly.

The operation of my anus lasted from 4 P. M. till 9 P. M., five hours, very painful — *itai*.

HOW TO CONSTRUCT A PRESCRIPTION.

SEATTLE, WASHINGTON TERRITORY,
Nov. 28, 1888.

MR. EDITOR,—Instead of the useless ℞ as a symbol, I use one composed of figures which have a meaning. If I want a four-ounce mixture of thirty-two teaspoonful doses, I use for a symbol $\frac{32}{1\text{-}2}$ (or 32—1-2). I then write the names of the different medicines I want in the prescription. If I want ten grains of A medicine to each dose, I write one half of ten, calling for drams, written just as we write dollars and cents, thus: 5 00. If I want twelve grains or minims of B medicine, I write one half of twelve, calling for drams as before. This shows the meaning of the ½ in the symbol. Suppose I want the fourth of a grain of C medicine to each dose. The 32 of the symbol is a dividend for fractions of a grain. I say, mentally, 4 in 32 equal 8 times, and write .08 or eight grains for the druggist to furnish. Certainly no further illustration of the use of the upper figures of the symbol is necessary. These rules apply to all sizes of prescriptions, the symbols for two, four, six, and eight ounce prescriptions are respectively 16—1-4, 32—1-2, 48—3-4, and 64—1.

In an eight-ounce prescription the figures calling for drams are the same that is given in each teaspoonful dose; thus,—in an eight-ounce mixture, if I want five grains or minims to each teaspoonful dose, I write 5.00 for the druggist to furnish. Of course this assumes that the dram contains sixty-four grains, which is near enough for all practical purposes.

Now let me construct a six-ounce mixture. I want of A sixteen grains, of B eight minims, of C the fourth

of a grain, and of D the sixth of a grain. I write as follows:—

For	Date.	Dr
$\frac{48}{3\text{-}4}$	A	1200
	B	6.00
	C	.12
	D	

A.p.v.q.s. Take a teaspoonful every four hours.

A.p.v.q.s. means any proper vehicle, enough to make a mixture the size indicated by the symbol. I believe physicians should order medicines only, and let the druggist exercise his skill in making the prescriptions as pleasant as possible. I discard all signs of grains, minims, scruples, drams, and ounces. I see no use in writing "fluid," when the medicine is known to be fluid. As well might one call for a fluid dram of water. I see no use of "M." "S." Surely the druggist knows enough to mix and write without being ordered every time. I seldom mix more than two or three medicines in one prescription. It is better to order not larger than an eight-ounce mixture; two, four, or six are much better, as then a change can be made, if necessary, without much expense to the patient. In case tablespoonful doses are wanted, calculate for teaspoonful doses, and then take one fourth. Look at the prescription given. If I want tablespoonful doses I write one fourth of twelve, equal to three (3.00), one fourth of six, equal one and a half (1.50), etc. Another way is, when tablespoonful doses are wanted, to change the symbol, dividing the figures by four, in this case making the symbol 12—3-16 instead of 48—3-4. It will be noticed that a two-ounce prescription with teaspoonful doses is the same as an eight-ounce prescription with tablespoonful doses. I call attention to these simple facts, not because I think physicians too stupid to see them, but to illustrate the principle of the dram-grain plan of writing prescriptions. Look at the prescription given once more. See how easy it is to calculate the amount of medicine of each kind in each dose. Of A twelve drams are called for. Multiply twelve by the fraction of the symbol, thus: 4 times 12 are 48, 3 in 48 = 16 times, the number of grains to each dose. Again, of B six drams are called for; 4 times 6 = 24, 3 in 24 = 8, the number of minims wanted. I think the rule is already self-evident to your readers, namely, divide the amount wanted by the fraction of the symbol, and write the result for the druggist to furnish. In a two-ounce prescription write one fourth, that is to say, if four grains are wanted, write one dram. In a four-ounce prescription write one half, in a six-ounce prescription write three fourths, in an eight-ounce prescription write the same.

I shall be pleased to send to any address a condensed statement of both the "dram-grain plan" and the "gram plan" of writing prescriptions.

Very truly yours,

C. H. MERRICK, M.D.

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 1, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Acute Lung Diseases.	Diarrhœal Diseases.	Typhoid Fever.	Diph. & Croup.
New York	1,526,081	691	242	18.48	16.38	2.38	.84	7.00
Philadelphia	1,016,758	302	106	8.91	10.23	.33	1.65	3.63
Brooklyn	751,432	300	117	19.80	19.14	—	1.32	13.53
Chicago	760,000	245	97	25.60	9.90	.90	6.30	17.05
St. Louis	449,160	134	55	16.28	12.58	1.48	2.22	11.20
Baltimore	437,155	167	61	15.60	7.80	2.40	3.60	2.40
Boston	407,024	172	51	19.78	8.62	.86	4.30	12.90
Cincinnati	325,000	110	—	—	—	—	—	—
New Orleans	248,000	114	49	14.96	7.92	7.04	.88	6.16
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	98	32	8.16	11.22	1.02	2.04	1.02
Pittsburg	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	17	3	23.52	11.76	—	11.76	—
Charleston	60,145	42	13	4.76	2.38	2.38	—	2.38
Portland	40,000	11	3	—	18.18	—	—	—
Worcester	76,328	24	10	—	—	—	—	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	22	4	11.11	22.22	4.55	4.55	—
Fall River	61,203	20	8	15.00	20.00	5.00	5.00	5.00
Lynn	51,467	11	—	18.18	—	—	9.09	9.09
Lawrence	40,175	16	7	—	12.50	—	—	—
Springfield	39,952	17	2	23.52	11.76	—	11.76	—
New Bedford	36,298	12	2	16.66	—	8.33	8.33	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	9	—	—	—	—	—	—
Chelsea	27,552	6	1	—	—	—	—	—
Haverhill	24,979	5	—	—	40.00	—	—	—
Taunton	24,796	—	—	—	—	—	—	—
Brockton	24,784	11	5	—	18.18	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	4	1	25.00	—	25.00	—	—
Malden	18,932	5	2	40.00	40.00	—	—	40.00
Fitchburg	17,534	7	4	42.84	—	14.28	14.28	14.28
Waltham	16,651	5	1	—	20.00	—	—	—
Newburyport	13,839	7	2	—	14.28	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2,590: under five years of age 878; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 428, consumption 358, acute lung diseases 348, diphtheria and croup 198, typhoid fever 60, scarlet fever 50, diarrhœal diseases 48, whooping-cough 24, measles 18, malarial fever 15, erysipelas eight, cerebro-spinal meningitis seven. From scarlet fever, New York 25, Philadelphia nine, Baltimore five, Chicago four, Brooklyn three, St. Louis, Cincinnati, Nashville, and Fall River one each. From whooping-cough, New York and Brooklyn nine each, Chicago and Washington two each, Philadelphia and Baltimore one each. From measles, New York 12, Chicago five, Baltimore one. From malarial fever, New York six, Baltimore four, Brooklyn three, Cincinnati and New Orleans one each. From erysipelas, New York four, Chicago, St. Louis, and Washington one each. From cerebro-spinal meningitis, New York three, Baltimore, Washington, Nashville, and Brockton one each.

In the 28 greater towns of England and Wales, with an estimated population of 9,398,273, for the week ending November 17th, the death-rate was 19.7. Deaths reported 3,551, infants under one year 882; measles 312, scarlet-fever 62, diphtheria 62, whooping-cough 55, diarrhœa 52, fever 51, small pox (Cardiff) one.

The death-rate ranged from 12.6 in Brighton to 24.3 in Cardiff, Birmingham 16.4; Blackburn 26.3; Hull 21.1; Leeds 21.1; Liverpool 22.2; London 19.7; Manchester 24.7; Norwich 17.8; Nottingham 16.3; Sheffield 20.1; Sunderland 21.4.

In Edinburgh 15.1; Glasgow 18.3.

The meteorological record for the week ending November 24, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.			Velocity of Wind.			State of Weather.*			Rainfall.	
Saturday, Nov. 24, 1888.	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.	Daily Mean.	8 A. M.	8 P. M.		8 A. M.	8 P. M.		8 A. M.	8 P. M.		Duration, Hours & Min.	Amount in Inches
Nov. 18	30.80	32.0	33.0	26.0	45	81	63.0	N.	S.		9	6		F.	O.			.00
" 19	30.26	45.0	56.0	34.0	78	92	85.0	E.	W.		14	10		R.	R.		12.45	.30
" 20	30.40	32.0	39.0	28.0	65	50	58.0	N. W.	N. W.		24	24		C.	C.		2.15	.04
" 21	30.58	22.0	29.0	14.0	53	77	65.0	N. W.	N. E.		12	3		F.	C.			.00
" 22	30.30	24.0	33.0	21.0	62	82	72.0	N. W.	N. W.		8	17		C.	C.		0.06	T.
" 23	30.70	20.0	26.0	13.0	68	88	78.0	N. W	N. E.		20	5		N.	O.		5.25	T.
" 24	30.55	32.0	34.0	22.0	58	81	70.0	N. W.	N.		10	15		O.	O.			.00
Means for the Week	30.54		36.0	22.0			70.0											

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM NOVEMBER 30, 1888, to DECEMBER 7, 1888.

WILLIAMS, JOHN W., major, surgeon United States Army, is hereby relieved from further duty with the battalion of the Second Artillery at Fort Wadsworth, N. Y. H., and will proceed to join his permanent station, Jackson Barracks, La. Par. 3, S. O. 256, Headquarters Division of the Atlantic, Governor's Island, N. Y. City, Dec. 5, 1888.

By direction of the Secretary of War the leave of absence granted First Lieutenant ROBERT R. BALL, assistant surgeon, in special orders No. 129, Oct. 18, 1888, Department of the Missouri, is extended one month. Par. 11, S. O. 219, A. G. O., Washington, Nov. 30, 1888.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING DECEMBER 8, 1888.

STONER, G. W., surgeon. When relieved, to proceed to Detroit, Mich., and assume charge of the service. November 26, 1888. Granted leave of absence for thirty days. November 28, 1888.

CARMICHAEL, D. A., passed assistant surgeon. Granted leave of absence for thirty days. November 27, 1888. Relieved from duty at Washington, D. C., ordered to marine hospital, Wilmington, N. C. December 3, 1888.

DEVAN, S. C., passed assistant surgeon. Detailed as attending surgeon and acting chief clerk Marine Hospital Bureau December 3, 1888. Granted leave of absence for eight days. December 8, 1888.

URQUHART, F. M., passed assistant surgeon. To proceed to Evansville, Ind., for temporary duty. November 30, 1888.

BROOKS, S. D., passed assistant surgeon. Granted leave of absence for thirty days. December 8, 1888.

NORMAN, SEATON, assistant surgeon. Ordered to examination for promotion. November 27, 1888. Granted leave of absence for twenty-five days. December 8, 1888.

FATTIC, J. B., assistant surgeon. Ordered to examination for promotion. December 7, 1888.

MAGRUDER, G. M., assistant surgeon. Relieved from special duty at Way Cross, Ga. December 8, 1888.

KINYOUN, J. J., assistant surgeon. Granted leave of absence for ten days. December 8, 1888.

VAUGHAN, G. T., assistant surgeon. Granted leave of absence for twenty-three days. December 8, 1888.

GUITTRAS, G. M., assistant surgeon. To proceed to Savannah, Ga., for temporary duty. December 3, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE UNITED STATES NAVY DURING THE WEEK ENDING DECEMBER 8, 1888.

BRANSFORD, J. F., surgeon, detached from Smithsonian Institution, and granted six months leave, with permission to go abroad.

SOCIETY NOTICE.

NORFOLK DISTRICT MEDICAL SOCIETY. — A meeting for scientific improvement will be held at the hall of the Roxbury City Guard, 67 Warren St., Roxbury, December 18, 1888, at 7.45 P.M. Communications: "The Treatment of Fever," by F. W. Vogel, M. D.; "Antipyrin," by E. E. Bancroft, M. D.

S. ALLEN POTTER, M. D., *Secretary.*

BOOKS AND PAMPHLETS RECEIVED.

The Radical Cure of Varicocele, attended with Redundancy of Scrotum, demonstrated by Time. By Morris H. Henry, M. A., M. D., LL. D., of New York, officer of the Royal Order of the Savior, of Greece; commander of the Imperial Orders of the Medjidie and of L'Osmanie, of Turkey; formerly surgeon-in-chief of the State Emigrant Hospitals of New York, etc. Announced, but not read, before the Section on Surgery, at the thirty-ninth annual meeting of the American Medical Association, May, 1888.

Etudes Thérapeutiques et Pactériologiques sur le Furoncle De L'Oreille. Par Le Docteur Lœwenberg. Paris: 1888.

Publications du Progrès Médical. La Mort par La Décapitation Par Le Dr. Paul Loye. Préface de M. le Dr. P. Brouardel. Paris: 1888.

The University of Minnesota. Catalogue for the year 1887-88; and Announcement for the year 1889.

The Yellow Fever Panic. By J. C. LeHardy, M.D.

Sixth Biennial Report of the Board of Trustees of the State Charitable Institutions of the State of Kansas, for the two years ending June 30, 1888. Topeka, Kansas: 1888.

The Contagiousness of Phthisis (Tubercular Pulmonitis). By Lawrence F. Flick, M.D., of Philadelphia. Reprint. Philadelphia: 1888.

The Catalogue of the Tokyo Medical Library. Sei-I-Kwai, No. 6 Shin Sakana Cho, Kyôbashi Ku, Tokyo. Tokyo: 1888.

The Constitution and By-Laws, with the Officers and Members for 1888-89, of the American Pediatric Society, organized in Washington, D.C., September, 18, 1888. Philadelphia: 1888.

The Chemical Factor in Disease. By Hugh Hamilton, M. Sc., M.D., of Harrisburg. Reprint.

Transactions of the Colorado State Medical Society. Eighteenth Annual Convention, Colorado Springs, June, 1888.

The Annual Report of the Health of the Imperial Japanese Navy for the 20th year of Meiji (1887).

Inebriate Asylums and their work. By T. D. Crothers, M.D.

Why Electrolytic Treatment of Stricture does not succeed in all hands. By G. C. H. Meier, M.D., Member of the New York State Medical Association. New York: 1888.

Double Ovariotomy during Pregnancy; subsequent delivery at term. By William Warren Potter, M.D. Reprint.

Treatment of Heart Disease. By James Barr, M.D. Mitral Stenosis. Reprint.

Original Articles.

TREATMENT IN CASES WHERE SYMPTOMS POINT TO INFLAMMATION IN THE MASTOID ANTRUM AND MASTOID CELLS,

BUT WHICH DO NOT CALL FOR AN ARTIFICIAL OPENING INTO THE MASTOID PROCESS.[1]

BY H. L. MORSE, M. D.

I MUST call your attention for a moment to the anatomical relation of the mastoid antrum and mastoid cells to the tympanic cavity.

In a very large proportion of cases the antrum is really a part of the tympanic cavity, or is separated from it only by a thin membrane. The cells also usually have direct communication with the antrum, or if they do not, they are divided from it by thin, bony septa, which open into each other, thus keeping up a communication with the antrum. The mucous membrane lining these cavities is a prolongation of that lining the middle ear, so that one may say that the tympanic cavity, mastoid antrum, and mastoid cells are all parts of one large cavity, more or less completely separated from each other by membranous, or thin, bony septa, and lined by a continuous mucous membrane.

I will also ask you to notice that the three bone specimens exemplify three characteristic forms of the mastoid process. In the specimen marked No. IV. the cells are normal in size and number. In No. II. the whole mastoid is divided into four or five large cells and its walls are very thin indeed; and in No. V. you see a very thick outer wall, and at the lower portion what is known as a sclerosed condition of the cells, they being filled up, and the bone becoming almost solid. This condition, which is here confined to the lower part of the specimen, is often found extending all through the mastoid process, and greatly complicates matters in case an opening has to be made into the bone by a surgeon.

On each of the specimens the groove which in life contains the lateral sinus is painted blue, and you will notice how near it approaches to the mastoid antrum, and how low down and far forward it extends in No. II. and IV., in fact, how little room the surgeon would have in case he was making an opening into the mastoid process at the point of election.

From the free communication which you see exists between the tympanic cavity, the antrum, and the cells, we should expect that any inflammation which attacked the mucous membrane of the former of these cavities would be likely to spread to the others, and this is what takes place; the antrum and cells are involved to a greater or less extent in almost all inflammation of the tympanic cavity.

It is my purpose to speak of the methods of treating these cavities in cases where they are involved to the extent of causing pain, tenderness, redness, and swelling behind the ear, but where the symptoms are not sufficiently severe and alarming to force us to make an opening into the mastoid process, until all other measures for relief have been tried without success.

[1] Read before the Boston Society for Medical Improvement, November 26, 1888.

Roughly speaking, we may class the methods of treatment under three headings: —

First, free outlet for the discharge, whatever its character, by way of the external auditory canal; and the application of either dry heat or dry cold to the surface of the mastoid.

Second, blood-letting by live leeches or the artificial leech, behind the ear.

Third, an incision behind the auricle about one quarter of an inch from it, carried down to the bone, and dividing the periosteum which covers the surface of the mastoid — Wilde's incision. Often, especially in acute cases, one or more of these procedures is sufficient to relieve the symptoms mentioned.

In simple acute inflammations of the tympanic cavity, before rupture of the membrana tympani has taken place, and especially if the membrane has become thickened by previous inflammatory processes, or where the perforation is a very small one, it is not uncommon to have pain and tenderness behind the ear. The mucous membrane lining the middle ear, and usually that lining the entrance, being acutely inflamed, swells, and by so doing diminishes the size of these cavities; at the same time it secretes very rapidly a profuse sercus discharge, which soon fills the tympanic cavity, backs up into the antrum and even into the cells, presses upon the bony walls, and until an outlet is found for it causes pain in the ear and over the mastoid, which is often severe, and may cause such serious symptoms that one can scarcely believe that they are due to a simple inflammation of the middle ear. In these cases, if seen soon enough, paracentesis of the membrana tympani, and gentle inflation of the ear by Politzer's air douche or the eustachian catheter, is usually all that is necessary to cause the pain and other symptoms to disappear. But the opening in the membrana must be kept free until the height of the inflammatory process is passed. Together with the paracentesis it is well to apply dry heat or dry cold to the surface of the mastoid. Heat is best applied by means of a flannel bag about seven inches long and three inches broad, shaped like a kidney; fill this two-thirds full of salt, heat it in the oven, and lay it *behind* the ear; *never* place it over the meatus, or, instead of heat you may employ cold, and this is often more effectual, using ice wrapped up in rubber cloth or Leiter's apparatus.

The next class of cases which I will speak of is acute inflammation with a thick purulent or mucopurulent discharge and a small perforation of the membrane, and together with these, what are often called nipple cases, where the perforation is so small and the discharge so profuse and so thick, that in its effort to get out it pushes before it the edges of the perforation, and you have a narrow canal, often as much as one eighth of an inch in length, projecting outward from the surface of the membrana tympani, and shaped like a nipple. Through this canal the discharge makes its way slowly and with difficulty, and it frequently becomes blocked altogether by mucus.

In these latter cases you almost always have the symptoms of pain, redness, and tenderness behind the ear. The treatment consists in passing a paracentesis needle, or, better still, a very small

knife (made for the purpose), through the nipple, or small perforation as the case may be, and make a large incision (much larger than you would ordinarily make) through the membrana. It is frequently necessary to repeat this in a day or two, as the wound made by the operation very often heals, and you have a repetition of the nipple on the membrana, and of the pain and tenderness behind the ear. The ear is to be gently inflated by the air douche or catheter, hot or cold applications are to be made to the mastoid process, and in addition it is often well to syringe through the eustachian tube by means of a catheter, warm water with a little bicarbonate of soda in it; this thins the discharge, clears out the middle ear, and dissolves or washes out the mucus, which in so many of these cases clogs the free flow of the discharge.

In another class of cases, usually where the discharge from the middle ear has been established for some time, and the case has been treated at home without calling in a doctor, the external auditory canal is swollen to such an extent that it is impossible to get a view of the membrana. The mastoid is red, very tender, and often œdematous. The first thing to be done is to douche the external canal, frequently and gently, with warm water, to endeavor to reduce the swelling somewhat. If we succeed in this, we almost always find that there is an insufficient opening in the membrana, which has to be enlarged as in the preceding cases, we also find that the discharge, in its efforts to make an outlet for itself, has forced the posterior superior portion of the membrana tympani away from its attachment to the bony wall of external auditory canal, and that the pus has dissected its way outward between the skin and the bony wall, causing the soft parts to bulge downward into the lumen of the canal, and to materially diminish its calibre. A very free incision should be made into this fluctuating mass, both to give free exit to the pus already collected there, and to serve as an additional outlet for the discharge from the middle ear, beside the opening in the membrana. In these cases also, syringing through the eustachian tube is very often useful, to wash out the swollen and obstructed tympanic cavity. If the pain, tenderness, and swelling over the mastoid are marked, it is usually necessary, in addition to what I have already mentioned, to apply leeches just behind the auricle, and close to it; I prefer the live leeches, and put on from two to four. In case the doctor does not personally attend to the leeching, it is well to mark on the skin the spots where he wishes them to be applied, otherwise they are very apt to be put on so far away from the auricle as to be of little or no use. In case the artificial leech is used, Dr. Bacon's instrument, which I have here, is, I think, the best and most convenient. It has the advantages that it is possible to take the blood from the exact spot desired, that the exact amount of blood necessary can be extracted, and that it is much quicker and more convenient. I do not think, however, that it draws the blood from the deeper tissues so well as the live leeches do. At a later stage in these cases we have the same bagging downward of the posterior superior wall of the external canal, and pain, tenderness, swelling, and doubtful fluctuation behind the ear. Here the pus, besides dissecting the soft parts of the external auditory canal away from its bony wall, has forced its way through one of the fissures of Santorini in the posterior wall of the cartilaginous portion of the external canal, and has formed a more or less well defined abscess either under the periosteum covering the external surface of the mastoid, or in the soft parts outside of the periosteum. In these cases the treatment would be the same as given above, except that instead of leeching we should etherize the patient, and make an incision about an inch long behind the auricle and parallel to it, down to the bone, being careful to divide the periosteum by the cut. This operation serves two purposes: it lets the blood freely at the exact spot where it is advisable to do so, and if there is a collection of pus it gives it free outlet. The wound must be probed daily, and kept freely open down to the bone, as long as bare bone can be felt in the wound, or a swollen bulging condition of the posterior wall of the external canal can be seen. All the cases of which I have spoken up to this point come under the head of acute cases, and it is usually in acute cases that the symptoms of pain, tenderness, and swelling over the mastoid will yield to the methods I have described. In a certain number of chronic cases, however, it is possible to relieve the symptoms without having recourse to the operation behind the ear.

In old neglected cases of otorrhœa, we often find the external auditory canal blocked completely up by polypi, which cause retention of pus, backing up, and pain and tenderness behind the ear, all of which vanish when the polypi are removed by the snare, the drainage of the tympanic cavity and mastoid antrum by way of the external auditory canal made good, and the masses of foul and cheesy pus with which these cavities have been filled washed out. In washing out the antrum, the middle-ear syringe plays a very important part. It consists of a very fine tube about four inches long, with the tip either straight or bent upward; it is attached to a syringe; and it is extraordinary what masses of cheesy pus and epithelium can be washed out of the upper portion of the tympanic cavity and mastoid antrum, by the help of this little instrument, after the tympanic cavity was apparently perfectly clean to one examining it through the external auditory canal.

Considerable care has to be exercised in using this instrument. The tip is passed into the tympanic cavity through the perforation in the membrana, and a stream of warm water is directed upward, or upward and backward, thus washing out the attic of the tympanic cavity and the mastoid antrum, The patient is cautioned not to move the head suddenly, even if in pain, but to tell the doctor, for if he did move suddenly the curved tip of the instrument might catch on the ossicles or the edge of the perforation and a serious accident be the result. The middle-ear syringe, therefore, is generally used on old patients who are accustomed to manipulations about the ear. Sometimes a patient who has had a discharge from the ear at some previous time, but whose ear has long been dry, will begin to have pain and tenderness over the mastoid. On looking into the ear you see a dry perforation of the membrana, and what looks like

a small dry scab in the neighborhood of the opening into the mastoid antrum. On removing this scab, you will find that it is only the outer layer of a mass of epithelium and dried pus which fills the antrum, and which by its presence as a foreign body has irritated its mucous lining; this irritation has set up a discharge which, soaking into the mass, has caused it to swell, and it has become so tightly wedged that the discharge cannot get out, and we have backing up, and the consequent pain and tenderness. Often the situation is complicated by the presence of granulations and small polypi.

Treatment consists in filling the ear with warm water with a little bicarbonate of soda in it, and allowing this to remain in the ear ten or fifteen minutes, to try and soften the mass; pulling the mass out or breaking it in pieces by the straight or curved forceps; syringing the ear with the ordinary and the middle-ear syringe; pulling off with the forceps the polypi and granulation tissue, and repeating these processes several times if necessary. Usually we succeed in removing the mass, thus clearing out the antrum, and setting free the imprisoned discharge, with relief to the symptoms; sometimes we do not, and it becomes necessary to make an opening into the mastoid cells, but it is always well, unless the symptoms are very urgent, to try what can be done by the forceps and syringe before resorting to the operation.

These are the methods of treatment to which I wished to call your attention, and these are the cases in which it is appropriate to employ them. Often it is best to try them in a different order from that in which I have spoken of them; each case has to be judged by itself, and there can be no hard and fast rule laid down.

Let me briefly recapitulate them. In acute inflammation with imperforate membrana: paracentesis; inflation; and hot or cold applications behind the ear. Acute inflammations, with purulent or muco-purulent discharge, and an inadequate opening in the membrana, and also nipple cases: large incision in the membrana; inflation; syringing through the eustachian tube; hot or cold applications over the mastoid.

Inflammation with purulent discharge, where the external auditory canal is almost closed by swelling, and the downward bulging of its posterior superior wall: frequent and prolonged douching with warm water; free incision into the wall of the canal, enlarging the opening in the membrana as soon as the swelling has subsided sufficiently for us to get at it; leeching behind the auricle; and in the more severe cases, especially if fluctuation be detected, Wilde's incision.

In chronic inflammations, where polypi are present: the snare; and, after their removal, the middle-ear syringe. For cholesteatomatous masses in the attic and antrum, soaking the ear with a solution of bicarbonate of soda; the middle-ear syringe; the use of the straight or curved forceps.

Many of these forms of treatment require the specially trained hand of the aurist; most of them can be best accomplished by him; but, on the other hand, some of them can be performed perfectly well by the general practitioner, and if it so happen that he cannot call an aurist in consultation, it is far better, in my opinion, for him to try some of the methods which I have mentioned rather than to feel that, if a patient has pain, tenderness, and swelling behind the ear, there is but one thing to be done, namely, to make an opening into the mastoid cells.

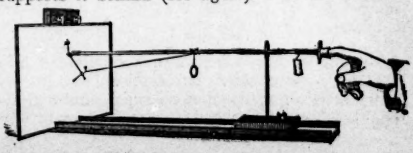
You noticed in the bone specimens Nos. II. and IV. how close the lateral sinus came to the mastoid antrum; by an anomalous position of the sinus it sometimes happens that a person operating exactly according to the rules laid down, as to where the opening into the mastoid cells should be made, can not avoid laying bare the sinus. This, fortunately, does not occur frequently, and usually is not attended by any very great danger when the operation is being performed by one who is accustomed to it, and knows exactly what the possibilities are, but it certainly is not an operation to be undertaken by a general practitioner, unless he is unable to procure the assistance of an aurist, and has tried the other methods which I have endeavored to describe to you, without relieving the symptoms. I have purposely confined myself to those cases where the symptoms are not so severe and alarming as to leave no doubt but that the mastoid cells must be laid open.

OBSERVATIONS ON THE STEADINESS OF THE HAND AND ON STATIC EQUILIBRIUM.

BY W. N. BULLARD, M. D., AND E. G. BRACKETT, M. D.

In the spring of 1886, in conversation with Dr. H. P. Bowditch, one of us suggested the advisability of some contrivance by means of which the steadiness of the hand could be readily determined. Dr. Bowditch thought well of the matter, and kindly invented the instrument used, and had it made at the physiological laboratory of the Harvard Medical School. For this instrument we suggest the name of tremograph.

It consists essentially of a long, light, wooden rod, which runs through a closely fitting brass cylinder so hung in a vertical compass-joint on the top of a firm upright as to permit of movement both vertically and horizontally in all directions. One end of this rod is furnished with a thimble or some other contrivance for holding the finger, while to the other is attached a Pflüger's pen. Various weights may be attached to the rod at various distances from its point of support, which of course can be varied at will, so as to keep it when unmoved in an absolutely horizontal position. The upright, made of brass, is placed in the centre of a rectangular wooden base, which can be moved backward or forward on a wooden platform with low, grooved sides, into which it fits closely. At one end of this platform is a transverse groove behind which rises a transverse board. This groove serves to hold the glass plate over which the paper for the tracings is stretched, while the board supports it behind (see figure). To the contriv-



ance holding the pen is attached a string by which the whole can be pulled backwards when not in use, and this string may be fastened to a little hook on the rod. When in use this string is loosened, the penholder hangs vertically, and the pen, projecting horizontally, comes into contact with a sheet of paper, which is placed over a layer of glass so as to offer a surface both smooth and firm for writing. The finger of the person to be tested is then placed in the thimble, which is connected with the rod by a compass-joint, and the motions of the finger will be accurately recorded on the paper. According as the point of support of the rod is at its middle or nearer one or the other end, so will the lines on the paper be of the same size as the actual movement or proportionately greater or less. As a matter of fact the tracings were magnified four times, that is, they were to the movements of the hand as four to one.

The first experiments with this instrument were made in the spring of 1886, but they were too few to be of any positive value. The work was resumed in the winter and spring of 1887, and has been continued more or less steadily ever since.

In order to give our investigations a positive value, it was thought best to first determine what position of the hand was most favorable for the tracing of the tremors or movements to be studied. For this purpose the first series of tracings were made. They were used only to compare the results obtained according as the hand was held in different positions. The tracings in this series were taken from eighty-five patients at the Boston Dispensary, and six tracings were taken from each patient.

It is evident that from such subjects it would be impossible to obtain a normal standard of steadiness; for although all due care was taken not to make use of any whose disease would directly affect them in this regard, yet any person suffering from an ailment severe enough to cause him to seek medical advice could hardly be expected to produce as firm a tracing as in perfect health. Besides, not only did the ordinary nervousness of patients at such a time affect the subjects, but this was greatly increased by their apprehension at the sight of a new and unknown instrument, which was frequently regarded as some modification of the electric battery, and momentarily expected to break out in some startling way.

For this reason it was early determined to use these tracings only to determine the relative value of the different positions of the hand for our purpose. The hand was tested in three positions in every case — pronation, supination, and midway between the two, both with the eyes open and with the eyes closed. This makes six different tests in each case, which for convenience have been numbered in the diagrams as follows: —

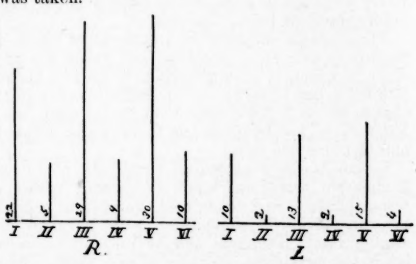
I. Pronation, eyes open.
II. Pronation, eyes closed.
III. Supination, eyes open.
IV. Supination, eyes closed.
V. Midway, eyes open.
VI. Midway, eyes closed.

All the tracings taken have been divided into two groups. I. Stable. II. Mobile.

In a certain proportion of cases no definite direction was taken, but the hand remained approximately at the point of starting. The tracing then appeared as an aggregation of many intercrossing lines, and was not developed in any special direction, its size, of course, varying directly with the steadiness of the subject. These cases have been designated as *stable*. In all the others the hand moved in some general direction from the starting point, and these have been grouped according to the direction taken by the hand (the opposite of that taken by the pen), under the headings Up, Down, Right, and Left.

Group I. Stable. The hand was held more or less firmly in the original position. It may or may not have been steady, but what movement there was was confined within very narrow limits, and there was no definite continuous movement in any one special direction.

The relative number of tracings of this character obtained under each of the six conditions is represented by the diagrams below. The two series represent respectively the numbers obtained when the right hand of the subject was tested, and when the left hand was used. In each series the height of the lines corresponds more or less roughly with the actual number of tracings in said series, and this number is noted by the Arabic figures, while the Roman numerals below each vertical line denote the special condition under which the tracing was taken.



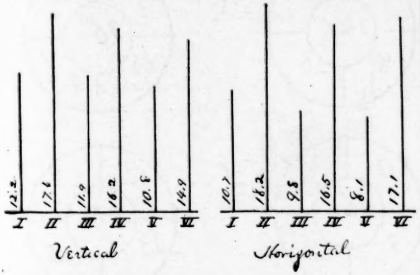
Comparing the lines in each diagram, which represent the number of the tracings in which the subject's eyes were open (Nos. I., III., V.), it is seen that the lines increase in height in the order named, and again, in those representing the number of tracings in which the eyes were closed (Nos. II., IV., VI.), a similar increase in the same order is observed. Thus the number holding the hand approximately in the original place is smallest in the position of pronation, and greatest when the hand is held midway between supination and pronation. Moreover, if we compare the average excursion, in both vertical and horizontal directions, of tracings in this group in which the eyes were open, with those in which the eyes were closed, the hand being held in each case in the same position, we find that the loss of the control of sight is felt more in the position of pronation than in either of the others, except in that of supination with the eyes closed, when the lateral movement predominated.

The following are the figures: —

Right hand.	Pronation, eyes open (I.) 22; eyes closed (II) 5. Supination, eyes open (III.) 29; eyes closed (IV.) 9. Midway, eyes open (V.) 30; eyes closed (VI.) 10.			
Left hand.		(I.) 10.		(II.) 2.
		(III.) 13.		(IV.) 2.
		(V.) 15.		(VI.) 4.
Being approximately	R.	1-4	1-3	1-3
	L.	1-5	1-6	1-3

Group II. consists of those tracings in which some decided movement of the lines in some particular direction from the starting point is evident. In these the hand has not been held more or less approximately in the same position, but has moved gradually in one direction or another. This is entirely independent of its general steadiness or tremulousness (shown by the firmness of the line).

In order to obtain the amount of movement of the hand from the starting point in each direction, that is, the total excursion, the length and breadth of all the tracings were carefully measured. As before stated, the rod was so arranged that the tracing was in each case four times the size of the actual movement.



The average excursion in each position for all tracings (Groups I. and II.) is seen in above diagram. The measurements were taken between the extremes in the vertical and horizontal planes. In series I. III. and V., that is, those with eyes open, the height of the lines diminishes in the order named in both planes and with either hand. The same holds good in series II., IV., and VI., where the eyes were closed, except that with the left hand VI. is six mm. longer than IV.; but if we add the averages of both dimensions VI. is less than IV. in all cases.

The average excursion in both planes in millimetres is as follows: —

	I.	II.	III.	IV.	V.	VI.
Eyes open,	9.8		9.09		7.6	
Eyes shut,		17.8		9.7		10.5

Now, if we compare the relative stability, as thus shown, with that obtained in our previous consideration of Group I., we find it also to be least in pronation. Thus the position of pronation gives the greatest excursion both when all the tracings are considered, and likewise when only those of Group I. are measured.

No attempt has been made to draw any conclusions in regard to direction in these tracings, as the second series was much more valuable for that purpose.

As to the amount of tremor in the various positions, no difference was detected between pronation and supination. In the midway position less tremor is observed.

For these reasons the position of pronation was considered the most favorable for our purpose, and another point which influenced us in this selection is that this is the position into which the hand most naturally falls when the arm is extended. It is rare that any one, when extending the arm to place the finger in the thimble, holds it in any other position than that of pronation.

The second series of tracings, one hundred and eighty-five in number, were taken from men between the ages of twenty and thirty, who were undergoing a competitive physical examination and were hence presumably as healthy a set of individuals as could well be found. Nearly every form of ordinary occupation and trade was represented, the liberal professions, of course, excepted. The tests were made previous to the physical examination, when the men were fresh and in good condition. The position used was pronation, and each hand was tested separately and with eyes both open and closed. Each test lasted thirty seconds.

In the study of these tracings the same classification is used as in the previous series. They too are divided into the two groups of the stable and unstable (stationary and mobile).

In considering the direction of the movement, it is evident that the tracings of Group I. can afford us no information; they have therefore been placed in the table under the heading "stationary."

This group is of interest mainly in reference to the relation between the results obtained with the eyes open and with the eyes closed.

Of tracings with the right hand and with the eyes open it is seen that one hundred and forty-one (76.21 per cent.) are in this group, while of those with the same hand while the eyes are closed only twenty-six (14.05 per cent.) belong here. With the left hand and the eyes open one hundred and sixty (86.44 per cent.) belong in this group, but of those taken with the eyes closed but thirty-six (19.45 per cent.).

Hence with the right hand there is a little more and with the left hand a little less than five times the control with the sight than without it. (This of course does not mean to imply that a given tracing with sight is five times more "stable" than a similar tracing when the eyes are closed, but only that five times as many "stationary" tracings are made when the hand is aided by vision as when not thus aided.)

In all the tracings of Group II. the movement assumes a definite direction, and in the table before us the direction of this movement is shown. The table is arranged so as to give the number and percentage of tracings in each direction in each of the four conditions. The conditions of the tracings are noted by the Roman numerals at the beginning of each line: I. right hand with eyes open; II. right hand, eyes closed; III. left hand, eyes open; IV. left hand, eyes closed. The remarks at the top of the columns show the direction. Thus, of tracings with the right hand and with the eyes open, in nine the hand moved to the right and in sixteen to the left, in nineteen downwards, in no case upwards. Of those which moved to the right, six moved downwards in addition and three horizontally only. The total in which the general direction of the movement of the hand was downward was thirty-three, upwards was three.

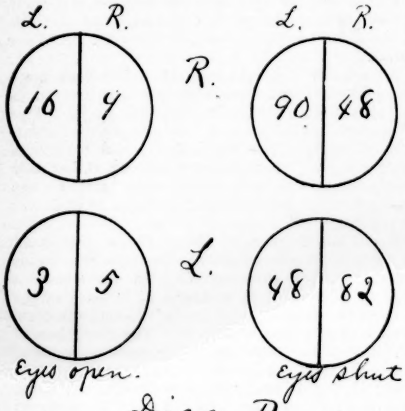
In a very few cases it may be seen that the hand rose, but so small is their number that they are probably due to accidental causes or to an over-estimated effort to prevent the hand from falling. The per-

centage in which the hand falls is large, especially when the eyes were closed. In the latter case, with the right hand, it is nearly four times as large as when the eyes were open, and with the left hand nearly five times as large.

Position.	Stationary.	R.	L.	Down.	Up.	R. & Up.	L. & Up.	R. & Down.	L. & Down.	Horizontal & R.	Horizontal & L.	Total Down.	Total Up.
I.	141	9	16	19	0	0	3	6	8	3	5	33	3
	76.21	4.86	8.64	10.27	—	—	1.62	3.24	43	1.62	2.70	17.8	1.62
II.	26	48	90	19	2	10	7	26	66	12	16	112	19
	14.05	25.94	48.64	10.26	1.07	54	3.77	14.05	35.67	6.43	8.64	60.54	10.27
III.	160	5	3	14	3	0	0	3	3	2	0	20	3
	86.44	2.70	1.62	7.56	1.62	—	—	1.62	1.62	1.07	—	10.81	1.62
IV.	36	82	48	16	3	7	12	55	25	20	11	96	22
	19.45	44.32	25.94	8.64	1.62	3.77	6.43	29.72	13.51	10.81	5.94	51.89	11.89

When the lateral direction is considered, a more interesting result is observed, namely, that the tendency of the hand is to move toward the median line of the body, and this is so whether the eyes be open or shut.

The following figures show the number of cases in which the hand moved in each direction: —

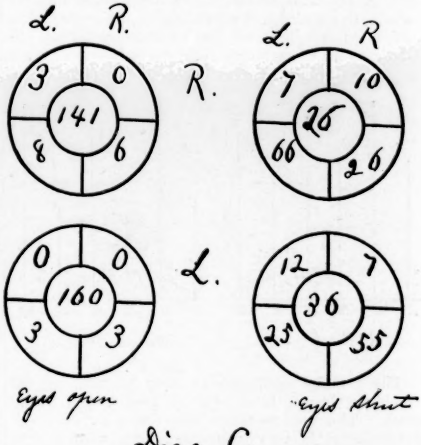


Diag. B.

These have reference to the lateral movement only. In a large proportion the direction was obliquely downward, but in a very few it was obliquely upward. With the eyes open only three moved obliquely upward, with the eyes closed thirty-six. When the eyes are closed and the hand is governed only by muscular sense, a large percentage fall toward the middle line of the body, in the proportion of a little more than two to one.

The number of tracings in which the hand moved obliquely upward when the eyes were closed is too small to enable us to form any definite conclusion in this regard, but in the larger number the tendency is to move in the same plane as the majority of those moving downwards, but in an opposite direction.

The figures, Diagram C, express these results diagrammatically, giving in the centre the number of stationary tracings, and in the circumference those moving in each oblique direction.



Diag. C

The amount of deviation from the starting point was also considered in order to determine the relative steadiness (stabiiity) under the different conditions. For this purpose the greatest height and width of each tracing was measured.

These measurements were as follows. Averages of Group I. (stable tracings): —

I.	Right hand, eyes open.	Length 6.57 mm.	Breadth 5.76 mm.
II.	" eyes closed.	" 5.43 mm.	" 9.01 mm.
III.	Left hand, eyes open.	" 6.24 mm.	" 7.22 mm.
IV.	" eyes closed.	" 7.93 mm.	" 7.43 mm.

Group II. The tracings vary considerably in size, as will be seen by comparison of the extremes: —

Position I.	Length.	Greatest 12.70 mm.	Least 2.00 mm.
	Breadth.	" 15.00 mm.	" 2.75 mm.
II.	Length.	" 20.00 mm.	" 3.75 mm.
	Breadth.	" 16.20 mm.	" 4.00 mm.
III.	Length.	" 12.00 mm.	" 2.50 mm.
	Breadth.	" 9.50 mm.	" 1.50 mm.
IV.	Length.	" 16.20 mm.	" 3.25 mm.
	Breadth.	" 15.70 mm.	" 1.50 mm.

If we compare now the average measurements of the tracings in both groups according as they were drawn with the eyes open or closed, we find a decided loss of control when the aid of sight is removed.

Averages, Groups I. and II.

Right hand, eyes open.	Length 7.70 mm.	Breadth 6.30 mm.
" eyes closed.	" 12.85 mm.	" 14.10 mm.
Left hand, eyes open.	" 8.42 mm.	" 5.26 mm.
" eyes closed.	" 11.42 mm.	" 12.99 mm.

RESUME.

In a very large proportion of cases with the eyes open the hand is kept approximately in the original position. With the eyes closed this number is

comparatively small, being about one fifth of the preceding. The average excursion of the hand in these cases, which is a measurement of its steadiness (stability) is 2.37 mm. for the right and 2.00 mm. for the left with the eyes open, and 3.87 mm. for the right and 2.37 mm. for the left with the eyes closed, the steadiness of the left hand being in each case greater than that of the right. The tracings, however, vary very considerably, the extremes being 2 mm. and 20 mm. in the vertical, and 1.50 mm. and 16.20 mm. in the horizontal, planes.

Occupation or training exerts more or less influence on the power to hold the hands in a fixed position (steadily), clerks and those accustomed to use the hands for fine work showing more power in this respect than men accustomed to rough physical work, as laborers, teamsters, etc. A number of records of professional men, not included in those under consideration here, show as a rule much more control than those of any other class examined. The power of control of muscular effort seems to keep pace with mental development. The method of various persons in attempting to control their hands during this test shows this strikingly. Persons accustomed only to rough and unskilled labor are, as a rule, unable to perform the more delicate motions, and are likewise less able to co-ordinate for unusual movements.

The number of tracings in which the hands moved upwards are too few to enable us to draw useful deductions. In the greater number the elevation was but slight, and may have been due to an over-estimated effort to prevent the hand from falling.

When, however, the hand descends a strong tendency to fall towards the median line is observed.

When the hand deviated considerably from the starting point with the eyes shut, the subject had as a rule no knowledge that it had done so, and was much surprised on opening his eyes to discover what had occurred.

As far as could be judged the functional disturbance arising from nervousness had no influence

PLATE I.

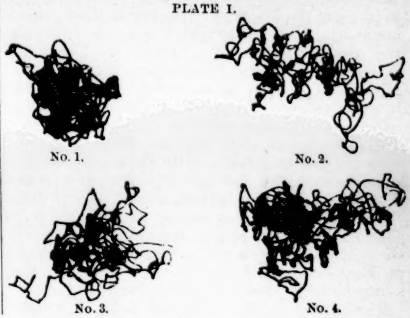
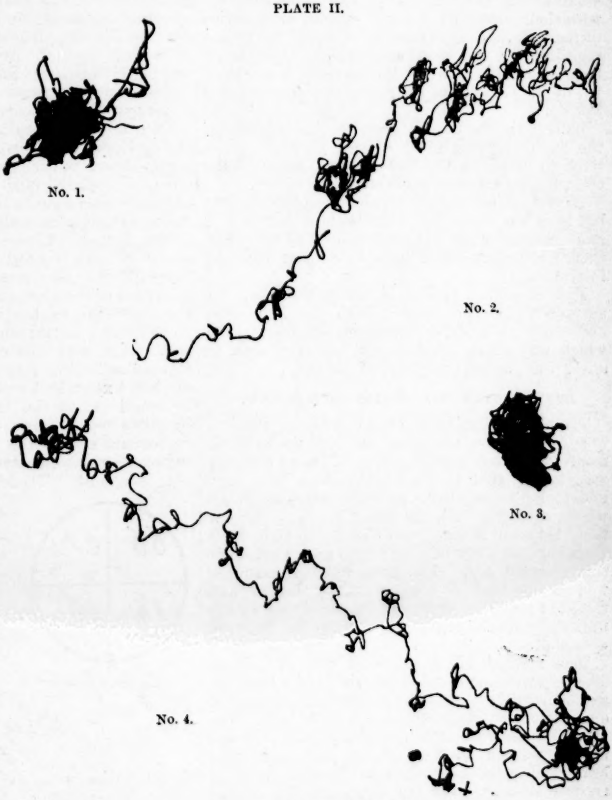


PLATE II.



Finger Tracings (natural size).

Figures I. 1, I. 2, I. 3, I. 4, show an ordinary series of finger tracings, all taken from the same person under one of the four conditions. I. 1. Right hand, eyes opened. 2. Right hand, eyes closed. 3. Left hand, eyes open. 4 Left hand, eyes closed. This is a typical series of the "regular" type. There is very little variation in the extent of the movement under the four conditions. The direction, however, varies: 1 is indeterminate, 2 upwards and to the left, 3 and 4 upwards and to the right.

Figures II. 1, 2, 3, 4, show another series of finger tracings taken in like manner (all from one person). They show well the contrast which often occurs when the eyes are open and when they are closed. 1 and 3 eyes open, 2 and 4 eyes closed. Control of vision apparent.

to increase the deviation from the starting point in any special direction, though it sometimes increased the size of the tracings of Group I. The disturbance from this cause, however, was much less than might at first sight be expected, the unsteadiness in great measure disappearing with the voluntary effort. In two cases, however, the disturbance from this cause was so great that all efforts to comply with the test were futile. With the attempt at muscular fixation the hand was thrown into so severe a spasmodic action that no control was possible. So far as could be determined in these cases no alcoholic influence and no organic disease existed. One of these subjects was a man who passed the physical examination for the police force, the other a woman debilitated by hard work and care.

The tremor can be estimated only by a close study of the tracings. It is totally unconnected with their "stability," or the amount or direction of their deviation. There is probably no tremor registered by this instrument which cannot easily be seen, and the study of its character is complicated by the presence of the coarse movements in the tracing.

Many of the fine tremors are not registered, because the slight support given by the thimble causes them to cease in the finger tested, although the other fingers continue their motion as before.

Hard-working laborers present no special tremor, but have less "stability" than those accustomed to more delicate work, but such tremor as existed in them was not overcome by mere contact with the instrument.

The emotional tremor is not a fine one. Its amount varies considerably with the individual, and frequently modifies or obscures any other tremor which may exist. It does not, however, seem to affect the control (stability) of the hand.

HEAD MOVEMENTS. STATIC EQUILIBRIUM.

The observations in regard to static equilibrium were made upon the same individuals as those from whom our second series of hand tracings was taken, that is, on healthy men who were undergoing a competitive physical examination, and whose ages were all, according to their declaration, between twenty and thirty, though it is probable that a few may have been somewhat above the specified age. The total number examined was one hundred and eighty-one, and they were all tested in regard to their relative steadiness in the upright position, with the eyes open and with the eyes shut.

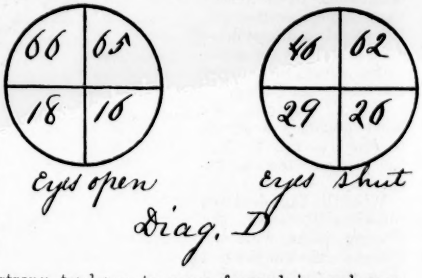
The method of examination was as follows. The men were made to stand with their heels together in military attitude, and with the eyes fixed on some object at a distance, yet easily seen. The apparatus used consisted of a square piece of board held in position on the head by plates of spring brass, and in appearance much like the cap of an Oxford student. On the upper surface of this board a paper was placed to receive the tracing. A horizontal rod was so arranged that it could be adjusted at the desired height, and to this a pen was secured by a hinge joint, which allowed a vertical motion only. In each case the time allowed was thirty seconds, and the pen was not allowed to touch the paper until a moment after the subject had taken the required position. The observation was first taken with the eyes open, and then, after an interval, repeated with the eyes closed.

From these experiments we obtained the following results. No person stood absolutely still during the time of the trial, but some moved much less than others.

The direction of movement was as follows. With the eyes open one hundred and thirty-eight moved forward, and only thirty-five backward, — the remaining eight either moving laterally only, or the direction of movement being indeterminate. With the eyes shut one hundred and ten moved forward and fifty-eight backward, while in eleven the movement was either lateral only or indeterminate, or equally forward and backward. These figures show that the ordinary man, while standing unsupported, has a strong tendency to move the head forward slightly, and this seems to be more free to show itself when the eyes are open, and the person can perceive that he is not actually in danger of losing his balance, than with the eyes shut, when a stronger exertion may be made to keep upright.

In regard to lateral motion, we find that with the eyes open eighty-five moved to the right, and eighty-six to the left, showing no preference for either direction. With the eyes shut, however, ninety-seven moved to the right, and seventy-eight to the left, showing a slight preponderance in favor of the former. Those not counted moved either nearly straight forward or backward, or the direction of their motion could not be determined.

In most of the cases, however, as may be seen from the above, the motion was not simply an antero-posterior or a lateral one, but a combination of the two. Thus with the eyes open sixty-five moved forward and to the right, sixty-six forward and to the left, sixteen backward and to the right, eighteen backward and to the left. With the eyes shut, sixty-two moved forward and to the right, forty-six forward and to the left, twenty-six backward and to the right, twenty-nine backward and to the left (diagram). These figures show again the



Diag. D

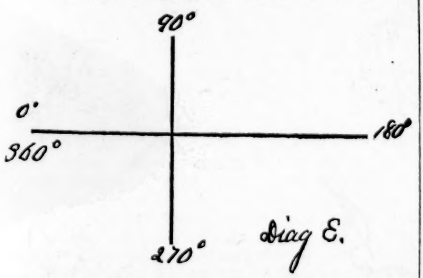
strong tendency to move forward in each case, rather than backward. They show also that this is less marked with the eyes shut than with the eyes open. With the eyes open, for those moving forward there is no preference shown for one side over the other, but with the eyes shut decidedly more move forward and to the right than forward and to the left. When moving backwards, a slight preference is shown, both with the eyes open and

shut, for the left rather than the right. With the eyes shut there certainly appears to be a decided tendency to move either forward and to the right, or in the reverse direction, backward and to the left, rather than in the other diagonal,—ninety-one (55.8 per cent.) moving in the one diagonal and only seventy-two (44.2 per cent.) in the other.

The foregoing figures show only the general directions of movement, but a number of measurements were also made to determine the position of the person at the end of the trial in relation to his position at the beginning. It was quite obvious, from an examination of the tracings, that the position at the end of the trial was not by any means always that furthest removed from the position at starting, but that, on the contrary, the subjects moved first in one direction, and then frequently backwards towards or even beyond the starting point,—these movements being, moreover, not always regular, but irregular, or more or less zigzag.

The directions of the points of ending from the starting points were measured on the tracings in degrees and minutes by means of a projector, and the following were the results obtained.

In only a certain proportion of cases could the two points be determined with sufficient accuracy to admit measurement of their relative direction. The direction was always measured from the starting point, which in all cases had been marked, to the point of ending. It was stated, as before noted, in degrees and minutes,—the line of the board pressed on the paper being taken as the base line. Thus any line parallel to this ran from 0° to 180°, and its perpendicular from 90° to 270°.

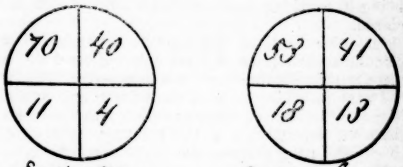


Diag E.

But of one hundred and twenty-five cases with the eyes open, in which these directions could be accurately determined, we found that in forty (32 per cent.) the ending point was upward and to the left of the starting point, since the position of the head at the end of the test was forward and to the right of that at the beginning. In seventy cases (56 per cent.) the position of the head at the end of the time was forward and to the left. In only eleven cases (8.8 per cent) was it backward and to the left, and in only four cases (3.2 per cent.) backward and to the right.

From the same number of cases, with the eyes shut, we found that in forty-one (32.8 per cent.) the position of the head at the end of the time was forward and to the right of its position in the beginning. In fifty-three cases (42.4 per cent.) it was forward and to the left of its original position, while in eighteen cases (14.4 per cent.) it was backward and to the left, and in thirteen cases (10.4 per cent.) it was backward and to the right.

Position of Head.



Eyes open. Eyes shut.

Diag. F.

From these figures we see that at the end of a certain period (thirty seconds) in the normal man, standing upright and striving consciously or unconsciously to maintain a stable equilibrium, the tendency is that the head should be in front of its original position, and rather to the left than to the right. Moreover, we see here, as in our previous results, the greater backward tendency with the eyes shut than with the eyes open, 24.8 per cent. of the former to 12 per cent. of the latter, or more than twice as many of those with their eyes shut, having had their heads back of the original position at the end of the half-minute, than of those with their eyes open.

The second question considered in these observations was the amount of movement. As the actual length of the lines could not readily be measured, this was determined by measuring the space covered by the lines. Thus the distance from the lowest point directly upwards to a point situated on the same horizontal line as the highest point, was considered as the absolute length. In other words, the distance between two straight parallel horizontal lines, the one passing through the lowest, and the other through the highest point, was considered the length; and similarly the distance between two straight parallel vertical lines drawn through the extreme points on each side was considered the breadth. All measurements were estimated in centimetres.

The measurements were calculated from one hundred and fifty cases as they came in direct order.

The average length with the eyes open was 3.764 cm., the greatest length in any one case 9.2 cm., the least 0.8 cm.

The average length with the eyes closed was 3.475 cm., the greatest length 8.9 cm., the least 1.2 cm.

The average breadth with the eyes open was 1.951 cm., the greatest in any case was 5.4 cm., the least 0.6 cm. (three cases).

The average breadth with the eyes closed was 1.963 cm., the greatest 6.8 cm., the least 0.4 cm.

From these results we can draw several conclusions. In the first place it is evident, as indeed is

very apparent from the tracings, that the antero-posterior movement is, both with the eyes open and shut, much more extensive as a rule than the lateral movement. Secondly, that the antero-posterior movement is on the average decidedly greater with the eyes open than with the eyes shut, while the lateral movement is the same under both conditions, being if anything more marked when the eyes are closed.

In order to show the amount of variation, a calculation was made of the number of cases which were within the limits of each centimetre.

In the following table, in the column under zero, is found the number of cases which measured less than one centimetre; in the column headed one, those measuring between one and two centimetres, and so on.

Table showing amount of variation in antero-posterior movement with the eyes open :—

0	1	2	3	4	5	6	7	8	9
1	20	37	48	25	11	9	6	2	1

This table reads: in one case only the length measured less than one centimetre; in twenty cases between one and two centimetres; in thirty-seven between two and three centimetres, and so on.

Measurements were also made to determine the distance between the starting point and the point of ending in each case, which shows the amount of variation in the position of the head at the moment of ending from that at the beginning. The average in one hundred and twenty-five cases with the eyes open was 2.840 centimetres; the greatest distance was 7.7 centimetres; the least was 0.2 (two cases). In the same number of cases with the eyes closed the average was 2.716 centimetres, the greatest distance was 8.0 centimetres, the least was 0.3 centimetres (two cases).

CONCLUSIONS.

I. The ordinary healthy man, when standing erect unsupported, has a tendency to move forward slightly, and this tendency seems to be more marked when the eyes are open.

II. Those in whom there is a forward movement with the eyes open show no preference in regard to the direction of the lateral movement combined with it, the number moving forward and to the right, and the number moving forward and to the left being nearly equal. When the eyes are closed, however, there is a stronger tendency to move forward and to the right than forward and to the left. Moreover, more persons with the eyes closed moved backward and to the left than backward and to the right.

III. The position of the head at the end of half a minute was found in a large majority of cases to be in front of the position at starting, and a larger number were forward and to the left than forward and to the right. This applies both when the eyes were open and when they were closed.

IV. More than twice as many persons, when their eyes were closed, had their heads back of the original position as did with their eyes open.

V. The extent of the antero-posterior movement was somewhat greater with the eyes open than with the eyes closed. The extent of the lateral movement was practically the same under the two conditions.

VI. The average extent of the antero-posterior movement was much greater than that of the lateral movement. In the majority of persons there was but little individual variation in the extent of the movements.

VII. The average distance of the head at the end of the time from its position in the beginning was about 2.8 centimetres with the eyes open, and 2.7 centimetres with the eyes closed.

We cannot conclude this paper without drawing attention to the very interesting article of Dr. Hinsdale on this subject in *The American Journal of Medical Sciences for* 1878, where the first reported observations on these head movements are detailed.

PLATE III.

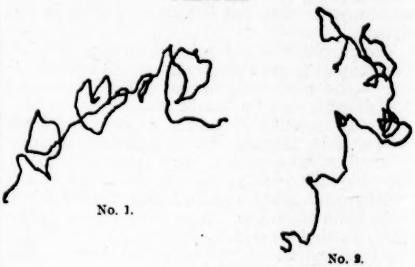
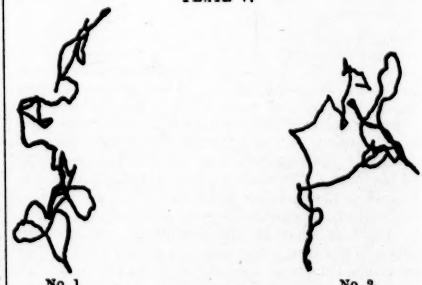


PLATE IV.

PLATE V.



Head Tracings (natural size).

In each case the tracings are taken from a single individual with the eyes open (2), and with the eyes closed (1). In all cases they are normal tracings.

III. These are typical tracings, rather mobile. The direction of movement is rather uncommon, being in both backward and to the left.

IV. Typical tracings, rather stable; direction of motion forward and to the left.

V. Typical tracings, average movement; direction forward and to the right.

We desire to express our special thanks to our friend, Dr. McCollom, to whose kindness we are indebted for the opportunity of making many of our observations, and also to Dr. Rufus A. Kingman, to whose skill we owe the excellent photograph of the tremograph.

REPORT ON DISEASES OF CHILDREN.[1]

BY T. M. ROTCH, M. D.

THE CEREBRAL PALSIES OF CHILDREN.[2]

OSLER has reviewed the clinical material at the Philadelphia Infirmary for Nervous Diseases and at the Pennsylvania Institution for Feeble-minded Children at Elwyn. Three divisions are made: hemiplegia, one hundred and twenty cases; bilateral hemiplegia, nineteen cases; and paraplegia, eleven cases.

Hemiplegia is a common affection in children, according to some writers occurring as frequently as spinal paralysis, but at the Philadelphia Infirmary for Nervous Diseases the proportion is not quite one to four. Of the one hundred and twenty cases, five were boys and sixty-three girls. There was right hemiplegia in sixty-eight and left in fifty-two cases. Of one hundred and ten cases at which the age at the onset was noted, fifteen were congenital, and in eighty-one the disease came on within the first three years of life. In nine cases the children were delivered with forceps; three were due to trauma; sixteen followed the infectious diseases. In the majority of cases the disease begins with convulsions and the hemiplegia is noticed when the child recovers consciousness. Incomplete recovery is the rule, but the patients are liable to the serious sequences of epilepsy and mental disorders. Thirty-one cases presented post-hemiplegic movements. The result of an analysis of ninety autopsies is given. In sixteen instances there were vascular lesions, as plugging of a sylvian artery in seven, and hemorrhage in nine.

The age of onset in this group was high, as, excluding three congenital cases, there was only one under three years of age. Atrophy and sclerosis were met with in fifty cases. Two instances are recorded of sclerosis from the Elwyn Institution.

Bilateral spastic hemiplegia is characterized by a spastic condition dating from, or shortly succeeding birth. There is no wasting; the reflexes are increased, the mental condition profoundly disturbed and ataxic, and athetoid movements of the most exaggerated kind may occur. Nineteen cases are described; two of bilateral athetosis. In sixteen reported autopsies the condition has been either cortical sclerosis or porencephalus.

Spastic paraplegia in children is closely related to bilateral hemiplegia, but the arms are not affected. It dates from birth, or comes on within the first years of life. The legs are stiff, the heels raised, and there is strong adductor spasm. The patient walks on the toes or there is cross-legged progression. The intellect is not so profoundly impaired as in bilateral hemiplegia. Eleven cases are described.

The morbid anatomy of the affection is not yet clear. Only one autopsy (by Förster, from the Dresden Children's Hospital) is reported. Cerebral lesion with descending degeneration was present. The reasons are given for believing that it is of cerebral origin, as suggested by Heine many years ago, when he named the disease "paraplegia cerebralis spastica." In the discussion on the pathology of the cerebral palsies, apoplexia neonotorum is held to play an important part in the production of bilateral hemiplegia and paraplegia. In hemiplegia there is still much doubt as to the nature of the initial lesion. Strümpell's poliencephalitis has not yet been demonstrated anatomically, though the view is very plausible, and subsequent autopsies may show the truth of it. The relation of the cases to the infectious diseases may be due to embolic processes associated with endocarditis, to arteritis or periarteritis such as has been described in the heart in typhoid fever, or to changes in the cerebral gray matter, similar to those which have been described in the cord in measles by Barlow.

The conclusion is reached that infantile hemiplegia is the result of a variety of different processes, of which the most important are: —

(1) Hemorrhage, occurring during violent convulsions, or during paroxysm of whooping-cough.

(2) Post-febrile processes: (*a*) embolic; (*b*) endo- and peri-arterial changes; (*c*) encephalitis.

(3) Thrombosis of the cerebral veins.

Under the section on treatment the question of operative interference is discussed, and two cases are noted in which trephining was performed for Jacksonian epilepsy following infantile hemiplegia. These are held not to be suitable cases for operation.

ACETONURIA.[4]

Baginsky has demonstrated the presence of acetone in the urine of healthy children. thus showing the existence of a physiological acetonuria for children, as has already been done for adults. He found that, pathologically, acetonuria stands in the closest relationship to the duration and intensity of the pyrexial condition; and experimentally, too, he found that in dogs acetonuria is intimately connected with protein waste.

THE INFLUENCE OF BACTERIA UPON THE DIGESTION OF CHILDREN.[5]

Baginsky, in a paper before the Berlin Medical Society, states that the bacterium of the lactic fermentation causes the production of acetic acid and acetone, as well as lactic acid. This formation goes on without oxygen, and is not hindered by the bile.

The neutral lactates are changed to butyric acid; starch is not changed to sugar, nor is casein or albumin decomposed. The gases formed when acetic acid is produced are carbonic acid, hydrogen, and methane.

He proposes to name this bacterium the "acetic bacterium." He further found that this bacterium is destroyed by acetic acid.

In examining the stools of children suffering from cholera infantum, he isolated a bacterium which produced green stools (the germ of Hayem

[1] Continued from page 575.

[2] Med. News, July 14, 21, and 28, Aug. 4 and 11, 1888; Amer. Jour. Med. Sciences, Nov., 1888.

[4] Archiv f. Heilkunde. vol. ix.; Amer. Jour. Med. Sciences, April, 1888.

[5] Berlin. Klinisch. Wochensch., No. 26, 1888; Amer. Jour. Med Sciences, Oct., 1888.

and Lesage), and also a bacterium growing in white colonies. Both of these liquefy gelatine, and both are inhibited in their development by the acetic bacterium; this germ has the property of preventing the growth of pathogenic germs in the intestine.

Baginsky considers that only the primary manifestations of cholera infantum are caused by bacteria, and that the secondary, severer phases result from the extensive anatomical lesions which have occurred in the intestine. It is evident that the treatment of a given case will depend upon the stage of the disease. He found that calomel, boric acid, and resorcin prevent the growth of the acetic bacteria; naphthaline and iodoform are inert. If the case is seen early, when acetic fermentation is excessive, these remedies and the withdrawal of milk are indicated. If pathogenic bacteria have accumulated in the stomach or intestines, irrigation with antiseptic fluids is advised. Each case must be studied separately, and interference with the conservative processes, as shown in the inhibitory action of certain bacteria, should only be undertaken intelligently.

Clinical Memorandum.

VICARIOUS MENSTRUATION.[1]

BY H. F. VICKERY, M. D.

CLEARLY marked cases of vicarious menstruation are so rare that I should like to put on record the following. In January, 1888, my advice was asked about Miss E. F., by her mother. The young lady was fourteen years old, and had always been well. She was not at all nervous, read no novels, and spent much time out-doors, riding, or otherwise sensibly occupied. She was not a "bleeder," and not subject to nose-bleed. In the preceding June the first menstrual flow took place, lasted one week, and was normal in every respect. Four weeks later, however, the menses did not appear, but for three or four days there were one to three profuse nose-bleeds daily. There was also a slight headache (congestive?). The statement was volunteered that the blood seemed to irritate or excoriate the nose somewhat. This monthly epistaxis continued up to the time of my knowledge of the case, in January. It did not seem to me, however, that any but expectant treatment was justifiable, the general health being so perfect. It remains to say that after these nose-bleeds had recurred with perfect regularity for fourteen months the catamenia began, scanty at first, and the epistaxis diminished. And at seventeen months from the first menstruation, the function had become normal, and so remains.

I have imperfect notes of a second case seen at the Massachusetts General Hospital. The girl, C. McD., æt. 13, was brought by her mother, who told me that about Christmas, 1887, the backache of which the girl had complained became worse, and for two or three days she spit up blood. The same symptoms recurred in January. In February she had a severe nose-bleed for one hour. In March she had nose-bleed two or three times. I did not feel certain about the interval between these occurrences, nor indeed of the accuracy of the statements made me; but I did not think there was any intention to deceive. This report was in March, 1888. A few months later the catamenia had appeared for the first time and become normally established, and the epistaxis and spitting of blood had ceased.

[1] Read before the Boston Society for Medical Improvement, November 26, 1888.

New Instrument.

A NEW FORM OF CLINICAL TUNING FORK.[1]

BY CLARENCE J. BLAKE, M. D.

THE tuning fork is especially useful as a hearing-test instrument because it affords a tone of definite musical value, having a definite decrease in intensity from the moment it is set in vibration — unless constantly actuated as in the forks kept in vibration by an electric current, — and because it can be used in testing the hearing power not only through the medium of the air but also through the medium of the bones of the head; the stem of the vibrating tuning fork in the latter test being touched to the teeth or pressed upon the vertex, the forehead, or the mastoid process, or elsewhere upon the head

The value of the tuning fork as an instrument of precision, however, is lessened by the fact that not only the *intensity* of its tone but also its tone value may be varied by the means and the force used in setting it in vibration; if, for instance, an ordinary tuning fork is struck upon a hard substance, there is immediately heard, in addition to the fundamental musical tone which is the characteristic of that particular fork, a number of overtones stronger and sharper in proportion to the force of the blow and the hardness of the substance against which the tuning fork is struck; if the fork is struck against some soft substance, the palm of the hand for instance, the sharp tones are not made prominent, and only the fundamental tone is heard, — varying conditions which in a series of comparative tests afford large margin for error.

To overcome these difficulties two plans have been adopted, — one that of actuating the fork by a blow from a hammer falling through a definite space, or moved by a spring of definite strength, the other (Politzer) that of affixing clamps by means of screws to the tips of the tines of the tuning fork, in order by the additional weight to decrease the production of the short sound-waves of the overtones.[2] Both the falling and the spring hammer were found to be unreliable for ordinary clinical work, and the movable clamps, although they possessed the advantage of permitting a change of the tone of the fork within an octave above its fundamental by moving the clamps up and down (Koenig), were found in rapid clinical work to be inconvenient. The French fork, which has its tines inclining toward each other at the tips and which is set in vibration by drawing a stick of wood or bar of metal upward and outward between the tines, though convenient, affords a tone

[1] Read before the Boston Society for Medical Improvement, Nov. 26, 1888.

[2] Bezold damps the overtones of the fork by fastening a ring firmly round the lower portions of the tines.

of varying pitch and intensity according as wood or metal is used and in proportion to the rapidity with which it is withdrawn.

By making a tuning fork weighted at the ends of the tines, as represented in the accompanying cut, the fork is found to be, of course, less productive of overtones, and by drawing the fork through the fingers or through a small ring, from below upward, the pressure upon the inclined surfaces of the projections forces the tips of the tines together, and the release sets them in vibration with a definite initial excursion.

The best standard fork for general clinical purposes is the physical C. 512 vibrations; but in order to make reliable tests it is important to have a series of forks covering a range of at least four octaves, one below and two above the tone mentioned, and also to include, as suggested by Dr. J. Orne Green, an A fork intermediate between the two upper C's. The establishment of a standard set of forks for uniform clinical use would be a decided advantage in the comparison of observations of different experimenters in a field which is at present deservedly attracting much attention, and as a suggestion in this direction a pattern series of forks on the above plan is now being made.[3]

In especial tests it is also an advantage to add to this series a second C. 512, which shall be so adjusted as to give beats when sounded in conjunction with the standard fork, a means of test which is sometimes of value in medico-legal as well as in ordinary clinical cases.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

F. B. HARRINGTON, M. D., SECRETARY.

November 26, Dr. O. F. Wadsworth, President, in the chair.

Dr. H. L. Morse showed

THREE CASTS OF THE MEMBRANA TYMPANI

consisting of the whole dermoid coat of the membrana, which he had removed entire from the ears of two phthisical patients. He had records of a number of other phthisical patients from whom he had removed similar casts of the membrana. All of these cases were patients who had well-marked physical signs of phthisis, but of rather a slow, mild form of the disease. In one of the cases the patient came under observation for the trouble in the ear some three or four months before he had any symptoms of disease in the lungs. When first seen he had a chronic myringitis, with a dull red and thickened membrana, and no symptoms of any other trouble in the middle ear. After several weeks the dermoid coat of the membrana peeled off in the form of a cast similar to those shown to-night.

They are of interest chiefly as showing the result of one of the forms of inflammation in the ears, which we may find in phthisical patients, and it is also of interest that in one of the cases the trouble in the ear antedated by three or four months the first symptoms of disease in the lungs.

Dr. Blake: The occurrence of casts is an interesting phenomenon in these cases, and even with an already existing perforation of the membrana tympani the casts will form and slowly or rapidly separate according to the rate of progress of the tuberculous disease; indeed the implication of the ear seems to bear a definite relation in its rate of progress to that of the progress of the trouble in the lungs; and I should like Dr. Green's opinion as to the bearing which a slowly progressive tuberculous or other disease of the lung may have upon the repeated separation of layers of epidermis in this way, whereas in cases of more rapid progress of the disease in the lung there is congestion of the upper portion of the tympanic cavity and rapid breaking down of the tissues. Is it not due to the reflex relationship between the lung and the ear?

Dr. Green: I see no better name than that of Wendt, "desquamative inflammation." It seems to me that it comes under that head. Why it is I don't think we know. As far as I know, pathology has not settled how it comes, or why. I have regarded this as the result of one form of inflammation of the tissue, resulting in desquamation instead of the higher form of suppuration, or something of that kind, and the inflammation in the ear is an inflammation due to the mucous membrane. I am not at all clear on the reflex origin of it. I have been inclined to attribute it to the tendency that there always is in mucous membranes to become inflamed in phthisis. Almost always in phthisis you get catarrhal conditions of the mucous membrane, and in a certain number of cases an inflammation in the mucous membrane of the ear, in the middle ear, and consequently a myringitis which I have not regarded generally as specific, but as a simple inflammation. I should have classed it under what the Germans call desquamative inflammation, just as you may have desquamation coming on in the tympanum or in the meatus. It is interesting coming in connection with general disease, but at the same time I have always attributed it to inflammation rather than considered it anything especially specific in the phthisical. This designation is not an arbitrary thing, but has been proven by microscopic investigation. It was proven by Wendt, and accepted, I think, by a large number of Germans, as one form of inflammation. Since his time I am not aware that anybody has attempted any microscopic investigation of the subject.

Dr. W. P. Bolles showed a

DERMOID CYST

which he had removed, and which had existed for twelve years. For many years it was supposed to be a fibroid of the uterus.

Dr. Blodgett: Dr. Bolles' very interesting history of this case has recalled a somewhat similar one to my mind. It was a case occurring some years ago in the practice of Dr. Wing. The patient died, and I made the autopsy. The history was of a longer duration than that of Dr. Bolles, and, like his own case, appeared to be a fibroid enveloping, or at least obscuring, the uterus and filling almost

[3] At the Institute of Technology, through the courtesy of Prof. Charles R. Cross.

the whole abdominal cavity. The weight of this was more than fifty pounds. It was accompanied during its later development by certain symptoms which seemed to indicate the presence of fluid. The patient observed this earlier than it could be detected by the physician, and described the sensation as that of "swashing." Her impression was that there was fluid, and that it was variable in position. At the autopsy a very large false aneurism was discovered in the middle of the mass of growth, it having originally been fibroid which had later undergone a malignant degeneration, in certain parts of sarcomatous character. In the middle of one of the larger masses, and entirely surrounded by true fibroid tissue, was an aneurismal sac about the size of the head of a child at full term, which accounted for the sensation experienced by the patient, and the indistinct fluctuation which had been described to the physician, but which was not explainable before death. I have never since had an opportunity to observe anything similar until this evening. The symptoms in Dr. Bolles' case certainly presented a marked resemblance to those observed in the patient of Dr. Wing.

DR. CLARENCE J. BLAKE read a paper on

A NEW FORM OF CLINICAL TUNING FORK.

DR. WORDSWORTH: Dr. Blake has preferred putting a ridge on the instrument to prevent the person running his fingers further along and producing louder tones. Would it not come to the same thing if one individual is stronger than another?

DR. GREEN: I do not see how that could be the case. The fork is set in vibration by pressing the arms together. Anybody in using the fork ought to press the arms firmly together and let go. It is merely the rapidity with which they are drawn through the hand that increases the intensity of the tone. Passing the finger and thumb down to this ridge would be practically the same as pressing the arms together and letting go. The weakest patient must be strong enough to do that, and the strongest patient could not do more than that. It is possible that with rapidity of motion one might get a little difference in the intensity of the vibration. It seems to me to be the nearest solution to getting an equal intensity of tone. This is what we have been struggling for for twenty years, and have never got any approach to it before.

DR. BLAKE: Another point: where the tuning fork is drawn through the hand throughout its whole length, there is greater spring from the ends of the fork where the pressure is made from the centre towards the tip than where it is from the tip alone.

DR. GREEN: I would suggest making the handle of the fork a little bit longer, three-fourth inch or so. Then one would be less likely in placing the fork over the mastoid to touch it to the patient's auricle and so stop the vibration of the fork.

DR. H. L. MORSE read a paper on

TREATMENT IN CASES WHERE SYMPTOMS POINT TO INFLAMMATION IN THE MASTOID ANTRUM AND MASTOID CELLS, BUT WHICH DO NOT CALL FOR AN ARTIFICIAL OPENING INTO THE MASTOID PROCESS.

DR. GREEN: I agree with the writer in almost all his conclusions. Certainly the free exit of the pus and thorough cleansing are the first things to be used in all of these forms of inflammation. I would add to what he says about treatment that I would make the cleansing as antiseptic as I could. Instead of warm water I prefer solutions of some of the antiseptics; not that you can make the ear perfectly aseptic, but I think we have reason to think it diminishes the amount of suppuration.

In the first three of the four classes of cases the writer makes, I fully agree with him in everything. In the last class of cases I am not quite certain that I am as conservative as he is. My experience more and more shows me that where you have got perceptible œdema behind the ear you have got pus; and I find that the oftener I make Wilde's incision now the oftener I find a hole through the bone. I think this is because I look for it more thoroughly than I used to. It is rather an exception with me to make Wilde's incision without finding at least a raw spot, and in the majority of cases a little opening; so that although Wilde's incision relieves a great many of the cases, yet in many we shall, I think, find a small opening, you do not increase the risks of the operation in the least and you improve the chances of rapid improvement in the patient by clearing that opening out, the opening being a slight carious opening and it is better to clear away all the carious walls down to the solid bone; and in doing that you evacuate the pus of the mastoid and hasten the cure, I think.

The exact time to open the mastoid is not an easy thing to settle. I believe in a conservative course. It is a serious operation, and not to be undertaken without serious consideration. I think on the whole, of late years, the experience of the largest operators is getting to be more in favor of earlier operations than it was. Schwartze, who has done more of the operations than anybody else, is, I am told, more and more in favor of earlier openings. The same, I think, is the case with Politzer.

What you are to call acute cases is also not easy to settle. I cannot put myself on record better than I did in an article written two or three years ago for "Buck's Handbook of Medical Science." If, in spite of antiphlogistics, and thorough cleansing with antiseptics, the pain continues, and swelling over the mastoid increases to distinct periostitis, and continues beyond four days, incision should be made down to the bone through the periosteum. After the periosteum has been incised it should be slightly raised and the cortex examined. I should like to add that point to what the author has written — after the Wilde's incision the necessity of examination of the bone for these little points.

If any serious symptoms appear — chills, slight fever, above all any symptoms pointing to the brain, — the question of operation becomes a serious one and should be considered immediately.

Again, we have the cases which I believe the author of the paper speaks of, where none of the methods relieve. I perhaps may be a little bit more radical in adopting an operation earlier than he would in the cases in which the symptoms continued, although he does not state exactly what he considers acute cases. With a great deal of pain, etc., unrelieved by antiphlogistics, by thorough cleansing with antiseptics, from five to seven days I should very seriously consider an operation. If

before that any serious symptoms set in pointing to the brain, or with chills, or high fever, I should consider an operation seriously earlier than five to seven days.

Dr. Blake: Dr. Morse has certainly covered the ground thoroughly in regard to cases in which the question of opening the mastoid does not enter; and in reference to that question I fully agree with Dr. Green in the importance of carefully examining the bone in the event of making a Wilde's incision, which may be the preliminary to the necessary opening of the mastoid, an operation safe in proper hands, in which, with due precautions, there is little danger, and from which there have been few fatal results.

Dr. Green: One other point I wanted to suggest to the author, as it seems to me a slight addition though an important one, and that is, that cholesteatomatous masses are often very serious indeed, and two or three words added to his paper calling attention to the fact would, I think, add force to the paper. It seemed to me he passed over it a little lightly. I have seen fatal meningitis produced by underlying caries of the bone where cholesteatomatous masses were found. There was a cholesteatomatous mass with underlying caries. I have had several cases of that kind. One appeared regularly at the City Hospital for ten years. On further examination I found I had a very large mass to deal with, too large to remove it. The only thing to do was to chisel away the whole bone. In the existing condition of things it did not seem advisable to urge it upon her; and she refused to consider it at all, and went on for years, appearing once in nine months or a year with a little acute attack of inflammation, which was relieved by clearing away what we could; but I was confident we never got out a quarter part of it. Finally her husband appeared one day and told me she had an attack of acute meningitis, from which she died the next day.

Dr. J. Whitney advocated the use of hot water, saying that he had never seen good results from cold.

Dr. Morse: I would like to say to Dr. Green, in regard to feeling for a soft spot of bone or an opening into bone in Wilde's incision, that I had written those very words in this paper; but on thinking it over it seemed to me that the cases which I wished to speak of were those where the pus had worked its way between the skin lining the external auditory canal and its bony wall, had burst through the posterior wall of the cartilaginous portion of the external canal and lay outside of the surface of the bone. Certainly, if the person finds soft bone, or particularly if he finds an opening into the bone, this very fact shows that he has to do with a class of cases where an opening into the mastoid is indicated and should be made either primarily or by doing Wilde's incision, and following it up by breaking open the small sinus in the bone and enlarging it.

In regard to the masses of epithelium and dried pus, there is no doubt whatever that some cases die finally of meningitis where these masses have formed in the antrum and cells, and have been removed over and over again by aurists and have collected again; necrosis has gone on under these masses and it finally makes its way through to the brain. I have in mind one case in particular where a patient was under Dr. Blake's care and my own for a number of years. In the early part of one summer the patient went away for a vacation. She was treated for malaria and typhoid fever because she had persistent headache. Finally, some four months after she had been seen by an aurist she became very ill; she became almost entirely deaf, and it was on account of her deafness that she was asked who her aurist was and that we were sent for. She was dying of meningitis when we saw her. In that case I had performed Wilde's incision some two or three years previously, and finding an opening into the bone had enlarged it and thoroughly cleared the mastoid antrum and cells. After the Wilde's incision had been performed, and the wound healed and the discharge from the ear had ceased, the masses began to form once more and had been removed from the middle ear through the external auditory canal. In that case, or in similar cases, if an aurist had been called early enough, he would have opened the cells once more and got free syringing through into the middle ear. Such cases as this, it seems to me, are again a little outside of the class of cases I wish to speak of. If there is caries or necrosis in the antrum and cells, removing the mass does not cause the discharge to cease and the ear to seem well; it is followed by purulent discharge, which does not dry up at once, showing that clearing the cavity out is not sufficient to cure the case. We have to probe, and if we find bare bone and it does not disappear we have to make an opening into the mastoid cells.

I am obliged for the criticism about the antiseptics. It was an oversight on my part. I did not intend to imply that we never used anything but warm water.

In regard to cold applications behind the ear: the object of using the cold was to allay the inflammation in the mastoid cells and mastoid antrum before there was any indication for operating, or leeching even. It often allays pain, and sometimes the inflammatory process seems to go down quicker and more effectually than when we use heat. At the same time a large number of cases, immediately after the application of cold, feel chilly and are worse for its use. In these cases we have to use heat instead of cold; but where cold does not cause these unpleasant symptoms and does check pain, I think it is often more effectual than heat. That has been my experience and was the reason why I laid some stress upon cold as well as heat.

Dr. H. F. Vickery reported a case of

VICARIOUS MENSTRUATION.

—A reception was given to the medical students of Jefferson Medical College by Prof. William S. Forbes, at his residence, Thanksgiving evening. After having tested the many good things, they were received with hearty Thanksgiving greetings by Prof. Forbes. The remainder of the evening was devoted to social conversation and the singing of old college songs. Many persons prominent in the medical and other professions were present. A similar reception was given by Prof. Forbes last year.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY, AND HYGIENE.

ALBERT N. BLODGETT, M. D., SECRETARY.

OCTOBER 10, 1888. Previous to the reading of papers, MR. A. E. LEACH, of the firm of Leach and Greene, exhibited some new or improved instruments for surgical, therapeutical, and hygienic purposes.

The first paper was upon

SYPHILIS OR TUBERCULOSIS?[1]

by DR. F. W. STUART.

DR. F. C. SHATTUCK: This is a very interesting case; and certainly the therapeutic results bear out the diagnosis of syphilis reached by the reader. Of course there is one means of differentiating between the diseases, the examination for bacilli, a means which, however, presents greater difficulties when applied to discharges from joints, serous sacs, etc., than when applied to sputum.

I have, as it happens, recently had under my care two cases in which this very question of syphilis or tuberculosis was naturally raised. One was a young man who came into the hospital without any very definite history except that he had been playing ball, which he was not accustomed to do, ten days before entrance, followed by general muscular soreness which any of us might have after some unwonted exercise. Then came abdominal pain; and when he entered the hospital he had a certain amount of fever; very marked abdominal tension, although not very great distention, because the man had a strong abdominal wall, which did not easily give way. The division of the recti muscles stood out in the clearest way, and the distention was due not only to gas in the intestine, but to free fluid in the peritoneal cavity. The lungs were clear. It seemed as if there might be some intestinal obstruction, partial or complete. Rectal examination was made, and a nodular enlargement of the prostate was found. There was also a hard lump in one epididymis. A consultation was held with Dr. Cabot with reference to surgical interference, the probable diagnosis seeming to be tubercular peritonitis. It was, however, ascertained that the man had before admission been treated by the iodide of potash, and it was determined to resume this drug. From this moment rapid improvement set in.

The ascites disappeared entirely; the prostatic enlargement and the nodules of the prostate diminished in size; the lump in the epididymis was not modified; but the man soon became convalescent, and I discharged him from the hospital two or three days ago, well as far as all general symptoms go.

The second case is one which was sent in to me perhaps a fortnight ago, — a man who presented a clear history of syphilis contracted during the war, and followed by loss of the uvula. Some five or six years ago the man began to have a cough with expectoration; and he has had three or four attacks during these last years of cough, with pretty profuse expectoration lasting for some time, then ceasing in great measure, with perfect recovery for all practical purposes between these attacks. I think the last attack — I speak from memory — was in 1884. Last June the man was walking in the street at 8.30 A. M., and the next thing he knew it was 10 o'clock A. M., and he was in a police station. The man was not intoxicated: he had loss of consciousness; as to convulsion we are not informed.

About five weeks ago he was taken with sudden stabbing pains in the right side, followed by cough. When he came into the hospital his general condition was rather poor, though he was no thinner than he ever has been. He is not a large, robust man. About a day after entrance he began to expectorate some moderately fætid sputum, and then we got, in the course of a day or so, signs of a large cavity in the upper lobe of the right lung, with a certain amount of infiltration of the surrounding tissue. We were greatly helped in our knowledge of this case by the fact that Dr James Minot had had him under observation during the previous attacks, and had sent him into the hospital. After each one of these attacks the improvement had been immediate on the administration of iodide of potash. That is what we are giving him now. The man is doing well. There is no fever, no loss of flesh, no hæmorrhage; but a sharply localized process in the upper lobe of the right lung. Three careful examinations of the sputum have been made for bacilli, and none have as yet been found.

It seems to me not improbable that if we, as a routine matter, treated every case of pulmonary tuberculosis that came along with mercury and the iodides, we might cure some that we now don't cure. At the same time we should hasten the end of many others.

With regard to the question of the administration of the iodides, it would seem to me that the iodide, when given in sufficient doses, will cause tertiary manifestations to disappear, but does not prevent them from returning. The prevention of recurrence is furthered by mercury. Therefore it is extremely important to use in all these old tertiary cases, in addition to a general tonic, mixed treatment — one for immediate, the other for a more permanent effect.

DR. VINCENT Y. BOWDITCH: It seems to me, in the first place, there can be very little doubt as to what the nature of this thing is, namely, syphilis. As Dr. Shattuck suggests, the examination of the secretion may help.

As to the iodide of potash, I should agree in pushing it as far as possible. I think oftentimes we neglect to help the case by not pushing it far enough. In many cases it seems as if the iodide of potash cannot be borne, the patient vomiting, etc. I recall one special case at the Carney Hospital — case of syphilis evidently; and beginning with five-grain doses he vomited immediately, and I thought I should not be able to give it to him at all. I found, by giving a saturated solution — one grain to a minim of water — and giving but one minim in aerated water — siphon soda-water — after each meal, he was able to retain it perfectly well. I gradually increased that a minim a day until he was able to take ten or fifteen grains and finally

[1] See page 575 of the Journal.

sixty or eighty; and the man is now practically well. I merely mention that as a practical point.

Dr. F. W. Stuart: I didn't mean that I gave thirty grains right off. I started him with five grains three times a day; then ten grains, etc., increasing by five grains. But it seems to me in his case it is a question of tolerance. He has taken thirty grains three times a day for about a month before he began to vomit, and I have given it simply in water. The ordinary dispensary formula gives it in water, and he very much prefers it now with gentian. He says that "covers it up," prevents the nausea. This was a case of intolerance late in the disease.

Dr. A. N. Blodgett: I have found the syrup of raspberry to be a most agreeable vehicle for iodide of potash. I have been able to procure a solution to the amount of fifty per cent. by weight of the iodide of potash in raspberry. There has been no nausea; no disturbance of the stomach — occasionally there occurred some digestive difficulty which was laid to the medicine, but I think improperly so. The only symptoms I have noticed referable to the iodide of potash were a metallic taste in the mouth after considerable quantities had been taken and continued some time. I have tried various vehicles with more or less flattering success, but I have as yet discovered nothing which I think has been so easily borne, and has covered up the disagreeable features of iodide of potash, as far as taste and immediate effects are concerned, as does the syrup of raspberry. It can be diluted with water; and the action when first taken into the stomach is in many cases more agreeable than is produced by any other medium that I have tried. The medicine is one which is sometimes so hard to get into the system that I fancy any variation of the ordinary vehicles for its use may be desirable.

Dr. P. C. Knapp: It is needless to repeat the remark — the fact that the limit of intolerance of iodide of potash is with the smaller doses — five to ten grains. Personally I do not consider I am treating syphilis unless I give doses of thirty grains and over; and it is my rule in treating cases of syphilis of the nervous system, which, of course, is about the only form that I see, to begin with thirty-grain doses, and increase from that. Giving iodide of potash in that way, the cases of intolerance I have found to be exceedingly rare. Where I have had occasion to use iodide of potash for other things, other affections, giving it in smaller doses (five to ten grains), I have got a much larger percentage of intolerance.

A paper on

Massage in Writer's Cramp and Allied Affections,[2]

was read by Dr. Douglas Graham.

Dr. Folsom: I would like to ask the reader if he knows what Mr. Wolff's method consists in — Wolff of London? He claims, I think, that he uses exercise and calisthenics alone.

Dr. Graham: Exercises so as to get all these muscles thoroughly tired out, and general calisthenics as well, so as to exercise all the muscles of the body.

Dr. Folsom: He claims some very remarkable results in pretty obstinate cases. I don't suppose he makes his treatment exactly known.

Dr. Graham: I think he relies principally on strengthening the weak set of muscles.

[2] On p. 569 of the Journal.

Resolutions.

Dr. F. Minot: It is to be regretted by all of us that Dr. Bowditch is unable to be present through illness. It is hardly necessary to allude to his constant philanthropic efforts to relieve the sickness of our country in times of distress from epidemics; of the great wisdom of his plans for relief, and the importance of the measures which he now proposes. Dr Bowditch's opinions on this subject are well known to most of us; and to those who have not read them I will say that the several copies here of a letter which he wrote in the papers last month will satisfy their desire to know what Dr. Bowditch thinks on the subject. I have been requested to read the resolutions which Dr. Bowditch suggests to this society.

. . . . . .

The President: These resolutions, as I understand it, provide only for a committee of five to report at the next meeting as to the voice of this society. I presume such a committee would present further resolutions to be acted upon by the society at the next meeting; and if there is no amendment offerer to these resolutions, will the society make some motion as to how the committee shall be appointed.

Dr. Blodgett: I move that the committee be appointed by the chair. (Carried.)

The President: The chair appoints Dr. Henry I. Bowditch, Dr. Francis Minot, Dr. G. H. Lyman, Dr. C. F. Folsom, and Dr. G. B. Shattuck to report to this society at its next meeting.

Adjourned at 9.45 o'clock.

NEW YORK ACADEMY OF MEDICINE. SECTION ON PUBLIC HEALTH, HYGIENE, AND STATE MEDICINE.

Typhoid Fever.

At a meeting of the Section on Public Health, Hygiene, and State Medicine of the New York Academy of Medicine, held December 7th, Dr. Cyrus Edson, chief of the bureau of contagious diseases of the city board of health, read a paper on "The Poison of Typhoid Fever." In the course of it he said that nothing was so discreditable in civilization as typhoid, since the disease was found everywhere and yet was easily preventable. Polluted water, milk, meat, and ice are the principal sources of infection. Wells are especially open to suspicion, and his experience and observation had led him to believe that there was scarcely a safe one in the country. Having referred to a number of epidemics which had been distinctly traced to a polluted water-supply, he said that he had just learned from Dr. Fordyce Barker of an instance occurring at a popular resort in New York State, where twenty-two persons had been taken sick, in consequence, in all probability, of using ice cut on a lake near by.

In typhoid we acknowledged that atmospheric contagion was impossible by admitting typhoid

patients to our general hospitals; but he believed that in this disease, as in cholera, digital contagion was possible, and that without proper care the germs might thus be left by the hands on door knobs, banisters, etc.

During the past autumn Dr. Edson said he had investigated one hundred and forty-six cases of typhoid in the central part of New York city. Of the patients, seventy-two were out of the city during the preceding thirty days, and of these twenty-nine had been in places known to be infected. About seventy-five of the patients had not been out of the city, as far as could be learned. Six cases occurred in a tenement house on 22nd street, where the water-supply was so arranged that a little of the contents of the vaults was sometimes pumped into the water-pipes. In a house on West 27th street the first case was imported from the country, but five others resulted from it; and in this instance also there were defects in the water-supply. Four boys had been attacked who were in the habit of bathing in the river near the mouths of sewers. Over fifty other cases, he said, must be traced to recognized causes — milk, ice, or digital infection. During September, October, and November, 1888, five hundred and fifty-seven cases and one hundred and thirty-two deaths were reported in the city, and in the same months of 1887 there were four hundred and thirty-five cases and one hundred and five deaths.

Safety would come from care in using ice, in employing only boiled milk, and in washing the hands carefully before eating, since it was an established fact that the typhoid poison could enter the system only through the alimentary canal. The Health Department, he said, was doing all that it could to prevent the disease. Every typhoid case reported was visited, careful instructions were given, and disinfecting measures were carried out.

In the discussion which followed the paper, DR. JOHN C. PETERS said that at present there was little danger from the Croton supply, but that increased danger might be looked for as population in the Croton district increased. The aqueduct commissioners had assured him, however, that they would appeal to the State Board of Health to take suitable measures to prevent the future pollution of the water.

Recent Literature.

The Principles of Cancer and Tumor Formation, By W. ROGER WILLIAMS, F. R. C. S. London: John Bale & Sons. 1888.

As stated in the preface, this is an introduction to a complete treatise on the treatment and pathology of cancer and tumor formation. The second part will be devoted to general pathology and treatment, and the four succeeding ones a series of monographs on that of the chief local varieties of the disease.

Briefly presented, the point which the author hopes to establish is that new growths depend upon the inherent property of indefinite and irregular multiplication of all cells, and which is only kept in check by "the restraining influence of the organism." When this is weakened from any cause, impaired nutrition, for example, they are reproduced without regard to the needs of the locality where they arise, and the result is a tumor formation. The degree of malignancy depends upon the degree to which the restraint is removed, the most malignant being the most free. To support this the laws of growth and reproduction are appealed to, and the evolution of vegetable and animal neoplasms are presented, and all are so forcibly used as to entitle the author's views to be regarded as a theory, rather than a mere hypothesis. It may be characterized as a germinal theory, in distinction from the embryonic theory of Cohnheim.[1]

In all speculations of this sort, something has to be assumed which is incapable of material demonstration: in this case it is the restraining influence of the organism as a whole on the development of the cells. But certainly the theory is a seductive one, from its wide generalization, and from its so well explaining the frequency of new growths in old age, a period when nutritive and inhibitory functions begin to fail. If correct, it shows the needlessness of searching for a micro-organism in cases of cancer, and also does away with the possibility of an origin from contagion.

The arguments are in general well and concisely stated, but there is a little repetition incident upon the fact that some of the chapters were originally published as magazine articles. It is a very readable book and will well repay perusal, and furnish food for reflection for those who care for aught else than the purely practical side of our profession.

A Text-Book of Pharmacology, Therapeutics, and Materia Medica. By T. LAUDER BRUNTON, M. D., D. S. C., F. R. S., etc. Adapted to the United States Pharmacopœia by Francis H. Williams, M. D., Boston, Mass. Third edition, Philadelphia: Lea Brothers & Co. 1888.

The first edition of this work was noticed in the Journal, December 17th, 1885.

In the present edition, considerable new matter has been added to bring the work up to date. The section on the action of drugs upon the eye has been carefully revised. The section on antipyretics has been rendered somewhat fuller, and some diagrams illustrating the pathology of fever, and the mode of action of antipyretics, have been introduced. The author still adheres to the opinion expressed in his first edition that "the most rapid and powerful antipyretic in specific fevers is the application of cold by bathing or sponging; and probably next in efficiency come large doses of quinine and salicylate of sodium" (p. 420). A short chapter on the treatment of cough and on the pathology and treatment of asthma has been introduced. The arrangement of the vegetable materia medica has been almost entirely remodelled on Hooker's plan; the general index has been carefully revised, and the Index of Diseases and Remedies (which is of considerable value for reference) has been revised to a certain extent. The additional matter in this edition amounts to about 120 pages, but by using

[1] This presupposes the existence of included embryonic cells, which lie dormant until something starts them up into the irregular growth of tumors.

thinner paper the bulk of the volume has been but little increased. A little more than a third of this work (twenty chapters) is devoted to Pharmacology. This is, in our judgment, by far the most valuable portion of the work. Nothing so original and so complete on the action of drugs upon the body generally, and on its various parts, has appeared during the lifetime of the present generation. This is strong language, but it is the truth. Twenty-five years ago it might well have been said that there was no *science* of therapeutics, that medicines were given for the most part empirically. In the student days of many, now veterans in the profession, it was taught that nothing definite about the actions of medicines was known. Jalap purged because it had a purging property; opium relieved pain because it had a pain-relieving property. That some considerable advance from this state of uncertainty to more definite knowledge has been made in the past forty years is owing to the fact that, coincidently with the great progress which has been made in histology and organic chemistry, experimental physiologists have been contending with the vexed problems of disease and of drug action, and the results of these researches are embodied in this book of Lauder Brunton. The great merit of the work, however, is not so much that the author has amassed such a body of facts from the archives of contemporaneous medical literature, adding thereto valuable contributions of his own (see pages 29, 42, 47, 55, 124, 129, 150, 176, 186, 228, 273, 430, etc.), as that he has been able so well to co-ordinate them into an intelligible and rational system of pharmacology; and henceforth no treatise on therapeutics will be considered as complete that does not in some measure adopt his method.

The physiological part of this work will be of especial interest to busy practitioners who have not had the time to keep up with the progress which has been made the past three or four decades in this department of study.

In some respects the present edition is hardly up to the times. Thus, under the head of hypnotics, no allusion is made to paraldehyde and urethane, the properties and uses of which were known before this edition went to press. No reference is made to Preyer's theory — based on accurate experimental observations — as to the proximate cause of sleep. The antithermic properties of antifebrin and antipyrin are mentioned, but nothing is said of the analgesic properties of these medicaments, properties which have been now known for more than two years. The benefits of large doses of strychnine in delirium tremens are not alluded to. We find no mention made of salol, which has now for three years or more been used on the Continent as a substitute for the soda salicylate. Nothing is said of salicylate of bismuth, so much vaunted by some Continental authorities for its superiority over tri-nitrate of bismuth in gastro-intestinal affections. There is no allusion to the use of hydrofluoric-acid inhalations in phthisis, or to the rectal medication of the same disease by gaseous injections of hydrogen sulphide and carbon dioxide. There is much that might seem a little imaginative, as, for instance, the diagram on page 576 illustrative of the action of acids and alkalies in headache. One disposed to be over critical might, moreover, challenge the scientific validity of statements made in almost every chapter. But it is not in the spirit of fault-finding that the busy physician will approach this book, but to learn something that will better fit him for his work, and on every page he will find something that will reward him for the time spent in its perusal.

We therefore conclude by commending this book as one which every physician should own and study. It is a work which, if once owned, will be likely to be read and consulted till the covers fall off from much use, and therefore we would here take the occasion to advise our readers before purchasing to see that their copy is bound in leather, and not in cloth.

E. P. H.

A System of Obstetrics by American Authors. Edited by BARTON COOKE HIRST, M. D. Vol. 1. 8vo. pp. 808. Philadelphia: Lea Brothers & Co. 1888.

This work, which is to appear in two volumes, is the companion of the System of Gynæcology by American Authors already issued by the same publishers. The favor with which composite treatises on medicine and surgery have been received by the profession warrants the belief that the same system of conjoint authorship may be successfully applied to obstetric medicine. Certainly, specialization in medical writing is in keeping with modern tendencies in medical practice; and, with a carefully elaborated system and judicious editing, should be productive of the best results.

The present volume embraces eight chapters. The first, on the History of Obstetrics, is by Engelmann, whose studies amply fitted him for this work. While not of practical importance, it is of great value and interest. The chapter on Ovulation, Menstruation, and Fertilization, and the Development of the Embryo, by Martin of Baltimore, is clearly written and well illustrated. The editor, Dr. Hirst, has written the chapter on the Fœtus, its physiology and pathology. We especially approve the system on which this chapter is prepared, by which the pathology of a part is considered in connection with its physiology and development. The physiology and pathology of pregnancy is well treated by Jaggard on the same general plan, and the chapter is embellished with a colored plate of the appearance of the areola in pregnancy, reproduced from Spiegelberg. The Phænomena and Conduct of Natural Labor are satisfactorily portrayed by Dr. Busey; but we regret that the importance of external palpation as a diagnostic measure was not more fully presented, and that the details of obstetric asepsis were not more clearly described and more forcibly insisted on.

The chapter on the Mechanism and Treatment of Labor, by Penrose, is a disappointment. The retention of the old nomenclature, and the description of six positions of the fœtal head, while perhaps convenient to those who have been hitherto accustomed to them, unfit the chapter for modern use. The treatment of posterior positions of the occiput and chin is not in accord with the best modern teaching. Dr. Reeve contributes a well-written and valuable chapter on the Use of Anæsthetics in Labor, considering the subject from an historical and a practical point of view. The author's belief in the superiority of chloroform over

ether for obstetric anæsthesia will hardly find acceptance in this part of the country; and as he does not describe the use and advantages of ether, this want has been supplied by the editor. Chloral, bromide of ethyl, and cocaine receive adequate consideration. Parvin's chapter on the Anomalies of the Forces in Labor, embracing also a consideration of pelvic deformities and fœtal anomalies, is written in the author's well-known clear and scholarly style.

As a whole, the volume deserves to rank well among similar works; and while not adapted to the use of the student, it will doubtless be favorably received by the studious physician. The appearance of the second volume will be awaited with interest.

The Urine and the Common Poisons. Memoranda, Chemical and Microscopical, for Laboratory Use. By J. W. HOLLAND, M. D., professor of Medical Chemistry and Toxicology, Jefferson Medical College. Illustrated. Second edition, revised and much enlarged. Philadelphia: P. Blakiston, Son & Co., 1888.

Chemical Experiments for Medical Students. Arranged after BEILSTEIN. By W. S. CHRISTOPHER, M.D., demonstrator of chemistry, Medical College of Ohio. Cincinnati: Robert Clarke & Co. 1888.

These books may be properly noticed together, inasmuch as both have been prepared with the same object in view, namely, to furnish a laboratory guide for the use of students of medicine.

Dr. Holland's work is limited to the chemistry of the urine and of poisons. It is a book which we can cordially recommend as in every respect an excellent one for use in the laboratory.

Dr. Christopher in his book first describes the chemical properties of nearly all the more important inorganic and organic compounds, whether poisons in the ordinary acceptation of the term or not. This part of the work will be found satisfactory so far as it goes. We do not, however, believe with the author that systematic qualitative analysis should be wholly omitted, as not adapted to the wants of the medical student.

In physiological chemistry, the work deals with the proteids and carbo-hydrates, the digestive processes, blood, bile, milk, and urine. The amount of instruction indicated by the author in these subjects will hardly satisfy the requirements of the medical student of to-day. The section on urine is especially unsatisfactory.

The Physicians' Visiting List for 1889. Philadelphia: P. Blakiston, Son & Co.

This is the thirty-eighth year of publication of this compact and excellent Visiting List. It is arranged for 25 patients per week. The blank pages are preceded by 32 pages of valuable data, including a number of useful diagrams.

—The Androscoggin Medical Association desire to have a general hospital established in Lewiston, Me. A committee has been appointed to take initiatory steps to the obtaining of a charter, and to make other provisions towards this end.

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A SIDE LIGHT UPON THE PLAGUE OF THE SIXTEENTH CENTURY.

AMONG the great plague years in the history of the city of London is the year 1563. Two centuries and more before, the Black Death, made forever famous and awful by the pen of Boccacio, had devastated Europe, and just a century later the pestilence took its final farewell of England. But 1563 was a bad year for the inhabitants of London. A glimpse of it, interesting to every student of the history of medicine, has just been presented in two old volumes, reprinted by the Early English Text Society. The one,[1] the work of Thomas Vicary, chief surgeon to Saint Bartholomew's hospital, first appeared in 1548 and was reissued in 1577 by the surgeon of Saint Bartholomew's. It contains, besides a treatise on human anatomy and various interesting contemporary documents, to some of which we may take occasion to refer at a future time, certain orders of the mayor and aldermen of the city of London, called forth by the plague. For instance, at a meeting, November 15, 1547, the lord mayor reported that it was the wish of the chancellor that signals should be displayed over houses where the plague was. It was ordered that householders in such cases should display in forty days a cross of Saint Anthony upon their houses, and that all wells and pumps should be drawn three times a week, and twelve buckets of water poured down the street gutters. In 1563, the worst year of the disease, it was ordered that two hundred blue headless crosses should be made for the chamberlain, to be set up on the doorposts of infected houses. Three days later two hundred more crosses were ordered. Again two days

[1] The Anatomie of the Bodie of Man, by Thomas Vicary, sergeant of surgeons to Henry VIII., Queen Mary, Edward VI., and Queen Elizabeth; master of the Barber Surgeons' Company and chief surgeon to St. Bartholomew's hospital, London. 1548-63. Early English Text Society. Extra series liii. 1888.

later the bailiff of Finsbury was furnished with blue crosses, and, what was more to the purpose, was ordered to have the dunghill lying in the highway near Finsbury court removed, and not to suffer any dung or filth thenceforth to be placed there. August 26, 1563, the mayor and aldermen adjourned for three weeks on account of the severity of the plague. Two weeks after reconvening they appointed two honest, poor men, under pay, to burn and bury such straw, clothes, and bedding as they could find in the fields, upon which had lain or died any person sick with the plague. January 20, 1564, the inhabitants were ordered "with all dylygence to ayre, clense and purge all theyre howsez, beddyng and apparrell for the daunger of the infeccion of the sycknes of the plague, forseinge neuertheles and takynge car that they or eny of them doe neyther hange or beate oute . . . eny maner of beddyng or apparrell that hath beyn or come nere to the daunger of infeccion of the sayd sycknes."

William King, surgeon of the pest-house, petitioned the court September 10, 1611, for compensation in view of his "great care and diligence in caringe of such persons as have beene sent thither," and because from his position his friends and former acquaintances refused to employ him in his profession. The appreciation held by the council for King's services and the value of his forfeited practice, is shown by their voting him £3 a year, to be paid quarterly, "so long as he shall continue his place of a chirurgeon at the Pest-house with that care and diligence as heretofore he had vsed." It was not long, however, before greater liberality was shown to the physicians. June 28, 1625, a committee of eight was appointed to confer with the doctors regarding the employment of one or two physicians by the city to treat those sick with the plague. This committee reported six days later that they had agreed with a Spanish doctor for one hundred marks per annum, and with Master Healt, surgeon, for fifty pounds per annum "to doe theire best endevors for the curinge of all the poore infected with the plauge for nothing; and of the better sort infected for some reasonable recompence."

Another view of the plague of 1563 is shown by the curious "Dialogue against the Feuer Pestilence" of William Bullein. This quaint old drama was published in 1564, and of this first edition only one copy is known to be in existence. The Early English Text Society have republished this book, which we can cordially recommend to these of our readers who like to give an evening occasionally to the rarer literary classics. Despite occasional prosy passages the dialogue is on the whole entertaining. The chief characters are Civis and Uxor, the former a prosperous London citizen, originally from the north country; Roger, their servant; Antonius, a rich Italian merchant, none too honest; Medicus, a precious charlatan, who plays on the fears and credulity of his rich patient; Crispinus, his apothecary, an appropriate tool of an unscrupulous master; Avarus and Ambodexter, two shyster lawyers, who have their eye on Antonius' fortune, for which, however, Medicus, as being more urgently in his patient's demand, appears to have the inside track. Mors and Theologus take a large hand in the closing drama. At first Civis and his wife propose to stand their ground and not be driven from the city by fear, but after the experience of Antonius with the doctor and his other victimizers, the citizen's heart begins to fail him. He says; "Good wife, the daiely iangling and synging of the belles, the commyng in of the minister to euery house, in ministering the communion, in readyng the Homelie of Death, the diggyng up of graues, the sparring in of windowes, and the blasyng forth of the blewe crosse, do make my harte tremble and quake." His wife is more than ready to flee. To his self-excusing of his flight and "trust that it is not againste Gods commandemente or pleasure that wee departe from this infected Ayre," she replies promptly, "I knowe not what God will in our departyng, But my fleshe trembles when I doe heare the Death bell ryng." They set forth from London, with rising spirits as they ride forth into the beautiful country. Roger, a wise fool, beguiles the way with many quaint conceits and tales of folk-lore. They alight at an inn, where they entertain at their private table Mendax, a traveller, who fills them with many wonderful stories of his adventures in "Terra Florida" in America. Later, having left the inn, a storm arises: Civis is suddenly overcome with terror. Mors appears. Civis hides his wife and Roger runs away. Mors gives his grim message. Theologus is summoned; a long dialogue ensues on mighty themes, and the curtain falls on the death of Civis.

Apart from the general literary value of this old drama, the physician will turn with special interest to the passages between Antonius and his medical adviser, who is named in the text of one of the editions Dr. Tocrub, an anagram upon the name of a Dr. Burcot, a somewhat celebrated man of that time, an expert in metals and minerals. At his first visit, Medicus cheerfully tells Antonius 'there are no verie good tokens neither in your Vrin, Pulse, sterte, etc.," but on Antonius making considerable display of his riches, promised to take his case. Tocrub has little use for religion or the Bible, but he does repeat with unction the following text: "Honour the Phisician with the honor that is due vnto hym, because of necessitie, for

the lord hath created hym: and hee shall receive giftis of the kyng, yea, and of all men." Calling in his apothecary he gives his orders, and when the latter says he has used up all his fine myrrh, and asks what he shall do, Tocrub says, "You are a wise man: put in *quid pro quo*, called *ἀντιβαλλόμενα*."

When Avarus and Ambodexter arrive, the physician hastens to bleed and purge his patient, sending them word that he is not to be disturbed. They wish to be made executors of his will, and, in revenge upon Tocrub for keeping the prey all to nimself, they steal his mule. Discovering his loss, he is about to rush off, when the frightened patient begs him to stay, and offers to pay double for the mule.

Antonius' distress of mind increases. Crispine's conscience begins to trouble him for the rotten drugs he has given, but the doctor reviles him for his foolish qualms. To Antonius' increasing largesses, Tocrub affects to offer objection, but speedily yields the point, so as not to "contrary" the patient. A long and rather wearisome conversation ensues between doctor and patient, the former explaining, in accordance with the Aristotelian philosophy, the nature of earth, the elements of God and the soul. Antonius after a while brings him to the question of the pestilence, which he explains in accordance with the teachings of Hippocrates, Galen, Ætius, and others. From vague generalizations he is re called by Antonius saying, "Goe not about the bushe with subtile words, but plainly speake the truthe to me, beyng in this fearful daunger, as you do wel knowe that I am in." The physician thereupon gives some not unwise advice, regarding diet, excesses, fright, cleanliness. "No Priuies at hand, a softer fire with perfumes in the morn-yng."

Then follows a description of the symptoms of the plague, substantially as we know them: the buboes, the carbuncles, etc. To which the patient naïvely says, "You have shewed more perilles then helpes bee therevnto." Then the physician proceeds to give the treatment, for which he draws upon the medical classics, for pills, potions, powders. To some of these Antonius naturally demurs, saying, "These are strong thinges for many weke stomakes," and adds, "I have heard saie that garlike and newe ale shoulde be good for the Plague." Medicus sententiously replies, "You doe saie truthe; garlike is good for to bryng it, but not against it."

The prescriptions given are long and elaborate, and among the emotions which they excite in the mind of the medical reader of to-day is perhaps chiefly that of wonder that the Black Death of the fourteenth century claimed in London, after all, only one hundred thousand souls.

SCARLATINAL RHEUMATISM.

OLLIVIER, in a recent lecture delivered in the *Hôpital des Enfants Malades*, treats of the swollen, painful joints which often complicate or follow scarlet fever.

As to the nature of scarlatinal rheumatism, he thinks that this is a complication, and not an intercurrent affection; in other words, we have here a malady which has sprung up under the influence of scarlet fever, and which is only an exaggeration of certain phenomena determined by this disease. Sennert came near the truth when he said that toward the close of scarlet fever the peccant matter attacks certain of the joints and inflames them.

Although Blondeau, eighteen years ago, thought that he had established a parentage between scarlatina and rheumatism, both having among their manifestations arthrites, sore throat, endocarditis, and cutaneous lesions, the erythema nodosum being to rheumatism what the scarlet eruption is to the other disease, there is really nothing but a certain analogy to support this view, while the two diseases are clearly separated by their origin, their symptoms, and their effects. The view is much the more probable that the arthritis of scarlet fever, like the endocarditis and pleurisy which sometimes accompany this specific fever, is but the manifestation of the exanthema on the serous system in general.

The most of these arthrites, formerly called secondary rheumatisms, merit the name of infectious arthrites. They are in fact pseudo-rheumatisms, such as one meets in the course of divers diseases: blenorrhagia, puerperal fever, dysentery, erysipelas, even tuberculosis.

By what processes are these morbid phenomena of the serous membranes brought about? It is probable that they are due to the irritation determined by certain micro-organisms which penetrate these closed sacs, being conveyed by the blood; in fact, recent bacteriological investigations have more than once proved the presence of microbes in the joint liquids of infectious arthritis.

As for the prognosis of scarlatinal rheumatism, it is relatively favorable, this complication generally terminating in recovery. It will not do, however, to forget that the joints may suppurate, and that the patient is then especially in danger of vegetant endocarditis, or of suppurative pericarditis.

GUM CHEWING.

THE *New York Medical Journal* has a good word to say of the habit of chewing gum, which, despite the fact that this habit has been condemned by all authorities on good breeding, the Journal thinks may in some cases favor digestion by an increase

of the salivary secretion, besides acting as a gentle stimulant to the stomach by reason of some of the aromatic principles being swallowed with the saliva.

It is possible that gum-chewing, if indulged only occasionally, and in moderation, with physiological intent, may have a beneficial effect in cleaning the teeth, and promoting a more free flow of saliva, but the writer in the Journal surely cannot have heard of the cachexia peculiar to the inveterate chewer of spruce gum in certain localities, as in the French-Canadian part of the Dominion, and in some parts of the Northern and Western States; this condition is characterized by a pale, yellow complexion, loss of flesh, strength, and appetite, with dulness and inaptitude for mental application. At least this is the report of school teachers who have witnessed the effects of the habit on school children, and have found it necessary, in the interest of the health of their pupils, to absolutely interdict the practice. Physicians have also given testimony of similar purport.

THE DEATH PENALTY BY ELECTRICITY.

At the late annual meeting of the New York Medico-Legal Society the report was presented of the committee appointed in September to investigate and report on "The best method of executing the law punishing criminal cases by electricity."

Experiments have been made upon twenty-four dogs, two calves, and one horse, with both the continuous and the alternating currents, and the committee found that with the latter as low as one hundred and sixty volts would suffice to kill a dog, while with the continuous current a much higher degree of strength was required to produce a fatal effect. Death by the alternating current was without a struggle, while with the continuous current it was painful and accompanied by howling and struggling.

The committee recommended that the criminal to be executed should be securely fastened in a chair, and that one electrode should be applied to the spine between the shoulders, and the other to the top of the head. A dynamo capable of generating an electromotive force of at least three thousand volts should be employed, and a current with a potential of from one thousand to one thousand five hundred volts and with alternations of not fewer than three hundred per second. Such a current allowed to pass for from fifteen to thirty seconds would insure death.

After considerable discussion the recommendations of the committee were unanimously adopted as the voice of the society.

MEDICAL NOTES.

— A correspondent writes to the Boston *Record* as follows: "Within a few days my attention has been brought to a matter concerning the public health wherein it seemed to me the school committee has been decidedly in fault. The text-books in some classes, where measles and scarlet fever prevailed last year, were taken up, put away without special precaution, and redistributed a short time since. In two classes that came under my observation there was no case of similar disease when the books were given out, but in a few days the children began to be taken down with measles, and a large number of cases can be traced to this centre of contagion. The greasy dirt that gathers on covers and leaves of much-used books affords, like city text-books, the best of soils for cultivating disease germs.

Scarlet fever may be readily propagated in this way, and its epidemics in various parts of the city may have owed much to this cause — an easily avoidable source. The thorough disinfection, or better still, the burning up, of a few hundred old books each year, might save the lives of many children.

— The Ladies' Health Protective Association of New York held a meeting December 11th, and talked over several matters which investigation has satisfied them stand sadly in need of reform. For some time past the association has been attempting to arouse a public sentiment which shall demand that New York city be furnished with garbage cremators in place of the dumping scows, which are emptied into the harbor. A committee has held a conference with the Board of Health, and that body has assured the ladies that if facts regarding efficiency and cost of the cremator can be secured, it will heartily co-operate in an attempt to have them introduced here.

The ladies at their own expense have engaged a civil engineer, who will visit the cities of Pittsburg, Buffalo, St. Paul, Minneapolis, and Des Moines, and make a detailed report upon the cremators in use there. Several of the companies making them have offered to put cremators in on trial, and the offer of one company has been accepted, and a site secured for its location.

— The medical examiners of the Boston life underwriters held their December meeting at Young's Hotel Dec. 11, President G. N. Carpenter in the chair. At the banquet speeches were made by Dr. Richardson, Dr. Wells, Agent-General Phelps, of Vermont, Dr. E. N. Whittier, Dr. Bundy, and J. B. Niver. Dr. Oliver Wendell Holmes sent a letter of regret.

—The *Indianapolis News* says: Des Moines, Iowa, sets an example for this and other cities to follow that do not already do likewise. Des Moines has a crematory for the city refuse which cost only $1700. As an indication of its effectiveness there was at one time recently burned in it, in one hour, two dead horses, seven dogs, eighteen barrels of garbage, three hods of manure, fifteen bushels of rotten eggs and three barrels of rotten fish, and no offensive smell was emitted. The disposal of city rubbish with us is coming to be a question of increasing importance; for with the use of natural gas an enormous amount of waste that was always burned remains to add to general accumulation, and "hauling it off" is a process that will not do forever.

—The *Chicago Tribune* interviewed a "leading physician" as to whether Sir Morell Mackenzie's fee in the case of the Crown Prince was often duplicated in Chicago, and received this estimate of average proportional earnings in that city: —

"There are, I think, not over half a dozen men whose income from their practice exceeds $10,000 or $12,000. They are men of the widest reputation, who have been years in building up a practice among a class of people that will pay a little above the usual rates. Moreover, they are men of sufficient business ability to succeed in other walks of life. If they have grown rich it is out of shrewd investments, not practice. There are a large number who earn on the scale from, say, $12,000 down to $6,000. Physicians consider themselves in good practice if they collect $5,000 a year. The great majority earn far below $5,000. Many make less than $1,000 per annum."

—Dr. Nathan R. Gorter, a physician of Baltimore has sued Mr. Robert Garrett in the superior court for $30,000, for professional services rendered by the plaintiff to the defendant during his recent trip around the world. He remained with the party for eight months, during which his attentions to his patient were so unremitting as to impair his own health. Payment of his claim was refused on the ground that it was excessive.

— An English medical contemporary, referring to the horrible "Whitechapel murders," of which, by the way, there has been a fresh specimen within a few weeks, solaces itself with the recollection of an epidemic of murder which swept over Texas a year or two since, lasting about a year. Eight women in all were killed, including two white married women. The others were colored women and girls. These murders have never been explained. The assassin left no trace whatever to identify him. There was a fearful similarity among all these murders. Nearly all were killed about midnight, and usually within a few days of full-moon nights. All of the victims were struck with some sharp instrument about the head, and on the same side of the head. All were slain in profound silence, even persons in the adjoining room hearing nothing. The bodies were all found in the same position. All were dragged out into the back-yard.

— The first annual meeting of the Southern Surgical and Gynecological Society closed its sessions December 6th.

The meeting has been a success in its every detail. A vote of thanks was extended to the president, Dr. Haggard, and the secretary, for the manner in which they had conducted their work.

Officers were elected for the ensuing year and committees appointed. The next meeting of the association will be at Nashville, commencing on the second Tuesday in November, 1889.

The officers are as follows: — Dr. Hunter McGuire, president, of Richmond, Va.; vice-presidents, Drs. W. O. Roberts, of Louisville, Ky., and Bedford Brown, of Alexandria, Va.

—The national association of railroad baggage agents have recently met to prepare rules and regulations regarding the transportation of corpses. They have sent to all State boards of health copies of a system of rules prepared by a special committee, with a request that the boards suggest such changes as they see fit. The Iowa board recommended that scarlet fever, typhoid fever, and puerperal fever be added to the list of diseases which render corpses non-transportable; that uniform regulations be adopted regarding disinterment; and that undertakers be compelled to undergo an examination as to their qualifications, and receive a certificate entitling them to engage in business.

—A lay writer in the *San Francisco Chronicle* pleasantly compares horse-doctors and "ordinary" doctors rather to the disadvantage, in respect to lucidity of directions, of the latter, and adds: —

"You know how doctors make out prescriptions. They put on the bottle, "A teaspoonful three times a day." Now, naturally, you have a great respect for a doctor's instructions as long as you are sick, and you worry over that "three times a day." You try to divide the day into three parts and fix a time at which you will take that medicine. You are busy and you forget to take the second dose on time, and you have to go to bed before it seems to you natural to take the third dose. You get up in the middle of the night and take it. Then you remember when you wake in the morning that you took it some time in the night, and you did not look at

the clock, and you feel either that it will do you no good, or it will kill you if you take too much of it, or if you don't give one dose a reasonable time to act before you take down another. And you don't know when to stop, whether one bottle's enough, or whether two bottles are too much. If the prescription would tell you — well — it wouldn't make much difference. You'd get mixed up all the same. I like this Arizona horse-doctor's prescription. It is clear, lucid, unequivocal, even if it is badly spelled. It is here *verbatim et literatim* : —

"One tabel spoon full for 3 days and leve of 3 days and repeat for 3 days and leve of for 3 days and repeat for 3 days. fead it on the Tung. Doe not Blankett to warm. fead soft fead."

— The failures of the faith cure, under the somewhat positive requirements of a new civilization, are illustrated by a Western contemporary, which says: "Dr. Jeremiah Addison, a 'faith curer' from Tin Cup, Colorado, had a brilliant success in Farmington, until he tackled the case of a cow-boy who had been stabbed. Just as the 'doctor' was telling him that he was only imagining he was hurt, the cow-boy's revolver went off, and the physician from Tin Cup fell into a dry-goods box, and would have been killed if friends had not interfered."

NEW YORK.

— At the annual meeting of the Society of Medical Jurisprudence and State Medicine, held December 13th, the following officers were elected: president, Dr. Landon Carter Gray; vice-president, C. H. Kitchell; recording secretary, E. C. Spitzka; corresponding secretary, Dr. J. F. Chauveau; treasurer, D. McL. Shaw. The paper of the evening was by Austin Abbott, Esq., on "The Whitechapel Murders and Criminal Lunacy," and in the course of it he said: "These slaughters are wholly within the lines of the habitual conduct of barbarous ancestors, indulged in for the pleasurable sensation of witnessing tortures. Cruel mutilations are not, therefore, inconsistent with average soundness of mind. The Whitechapel murderer is behind the times. He is an anachronism, but not necessarily to be accorded the charity of considering him insane."

— It is announced that Mr. John Jacob Astor has signified his intention to erect a pavilion for male patients in connection with the New York Cancer Hospital, which is to be a memorial of his wife, and will cost about $150,000. The entire amount of Mr. Astor's gifts to the hospital exceed $300,000. The wife of Gen. Cullum, another of the founders of the institution, left by her will provisions for the erection of a chapel at a cost of $50,000; and work will be begun on the new pavilion and the chapel as soon as the architect's plans have been perfected. The Cancer Hospital has just celebrated its first anniversary; having been opened for the reception of patients December 7, 1887. During the year two hundred and sixty-one women have been treated in it. It is the first hospital erected in this country with circular wards, and this special feature has proved very satisfactory.

— The annual meeting of the Medico-Legal Society was held December 12th, when the following officers were elected: president, Clark Bell; vice-president, Dr. W. H. Stevinson; secretary, Albert Bach; treasurer, E. W. Chamberlain.

Miscellany.

HOSPITALS AMONG THE GREEKS.

An interesting lecture, which is reported in the *British Medical Journal* Nov. 10, was given on November 3rd by Miss Jane E. Harrison, at Toynbee Hall, Whitechapel, London, on hospitals among the Greeks. The lecturer, who illustrated her discourse by the use of a magic lantern, said there was no one of the Greek gods who had been so thoroughly misunderstood as Æsculapius, the god whom the people came to consult in their difficulties, and especially in cases of sickness. His temple at Athens, which had only recently been excavated, was nothing more nor less than a hospital, where people went to get their diseases diagnosed and cured. This, like the other Greek temples or hospitals, had three indispensable things — a shrine, a large apartment in which the patients slept or walked about, and a spring of clear water, known as the holy well. From the very earliest times the people were always careful to choose for their temples very healthy places — as a rule, some far-away inner valley, where there was a pleasant grove of trees and plenty of pure water. The lecturer went on to describe the method of treatment which the patients underwent, and the manner in which they were really made to dream, and thus came to believe so thoroughly in the powers of the dream god Æsculapius. In the first place, a patient had to leave his home and most of his friends, so that there was a complete change of environment. He found everything quiet and tranquil, and he was shown all the offerings made by former patients in thankfulness for the good they had received from the dream god. He would have a long conversation with a priest, who by this means discovered what the patient's ailment was, and, after a burnt-offering on the altar, he went to bed. It was not at all wonderful, under the circumstances, that he had a dream. There were some who would not conform to the rules as to diet, and we were told that the gods wisely refused to visit them in the night. There were, however, some heavy sleepers who could not dream, and these were allowed to have a friend to dream for them, or for a small sum they could hire a professional dreamer. In some instances there was no doubt the priests dressed up in fantastic garments and appeared before the patients,

who were thus led to believe they saw visions. After the dreams, practical remedies were applied, and many of the remedies of Æsculapius were the same as would now be given in similar disorders; and there was an instance of a physician offering as a token of his gratitude a stone set of his surgical instruments. The lecturer then gave an interesting description of a number of stone offerings placed in the temple by patients.

SCURVY IN THE RUSSIAN NAVY.

DR. A. P. LEVITSKI has published as a graduation thesis an interesting work on scurvy in the Russian navy from 1835 to 1884, which we find noticed at some length in the *Lancet*. During this period of fifty years the total number of cases of scurvy was 114,266. In the first half of these fifty years 6 per cent. of the men were affected, during the second half 2.2 per cent., and during the final quarter of the period only 1.6 per cent. This improvement seems to have been due to the better care that has been taken of the men in recent years, and especially to the improvement in their dietary. The cases have been less numerous at sea than ashore, and this difference is ascribed to the ration of meat allowed at sea being nearly double that allowed on shore. Climate alone appears not to play any part in the etiology of the disease. It occurs in all latitudes, and is sometimes very rife in the tropics. During the first half of the fifty years referred to, the Black Sea fleet suffered less than the Baltic fleet, and the Archangel fleet showed a scurvy rate only half as high as the Black Sea fleet, and less than half that of the Baltic fleet. In the latter half of the fifty years the rate in the Archangel fleet was only about a quarter of that of the Baltic fleet. During autumn and winter the disease, as a rule, almost disappears, both at sea and on shore. The general sickness rate has increased in recent years, while the scurvy rate has, as we have seen, diminished in a marked degree. In the Archangel, Black Sea, and more especially in the Caspian fleets the sickness rate from fever has lately been very high, being nearly 40 per cent. in the Caspian fleet ashore and 55 per cent. afloat; but, nevertheless, in all these fleets the amount of scurvy has been insignificant. Again, catarrhal and febrile affections are more frequent at sea, scurvy being, as above mentioned, more frequent ashore. The main factors in the etiology of scurvy are fatigue and insufficient nourishment. Thus it has been observed, over and over again, both at sea and on shore, that an outbreak of scurvy has followed an increase of work, the diet being of the ordinary kind; also that such outbreaks could be checked either by diminishing the work or by improving the diet, especially by increasing the meat ration.

SUBDURAL ABSCESS OF THE BRAIN.

THE *Polyclinic* (Nov., 1888) publishes the following conclusions of Sir William Stokes regarding abscess of the brain:—

1. That after the primary symptoms of cerebral traumatism have subsided, there is frequently a latent period of varying length, during which there are no distinct brain symptoms connected with abscess formation whatever.

2. That their appearance is, as a rule, sudden, and if uninterfered with they run a rapidly fatal course.

3. That the occurrence of pus production resulting from cerebral traumatisms is not incompatible with a perfectly apyrexial condition.

4. That this latter fact will probably aid in differentiating traumatic cerebral abscess from meningeal or encephalic inflammation.

5. That both as regards color and consistence there is great variety in the contents of cerebral abscess cavities, and that, as shown in Wilne's case, published by Rose, of Berlin, they may become transparent.

6. That antisepticism has largely diminished the risks of the operation of trephining.

7. That, having regard to the great mortality of cases of cerebral abscess when uninterfered with —viz., from 90 to 100 per cent.—the operation is indicated even when the patient is *in extremis*.

8. That, in the case when the trephine opening does not correspond to the situation of the abscess, exploratory puncture and aspiration may be employed.

9. That by the adoption of this measure the necessity for multiple trephine openings can be largely obviated.

10. That the employment of a blunt-pointed aspirating needle, as suggested by Rentz, is probably the safest mode of exploration and evacuation.

11. That drainage is desirable in the after-treatment of such cases.

12. That both during and subsequent to operative interference in these cases a rigid antisepticism is imperatively required.

Correspondence.

"THE NURSE AT LARGE."

BOSTON, Dec. 12th, 1888.

MR. EDITOR:—Will you allow me space for reference to the "nurse at large" to be found at No. 6 Carver St.?

From 9 to 11 o'clock A.M. orders for the nurse may be left at this place, in the rear rooms, up one flight. Physicians who wish to meet her in person before she goes on duty, will find the nurse at the office between 1.30 and 2 o'clock P.M.

She is a trained nurse, and her work is to teach the friends of *poor* patients how to take care of them. She will visit a patient every day so long as her services may be required. She is not allowed to spend the night by the sick bed unless it be absolutely necessary. She goes from patient to patient during the day, teaching the various things needed in the care of the sick.

This is a charity. The services of the nurse are offered gratuitously to the very poor. The ladies who originated the work are anxious to make it a success. Its advantages hardly require mention. Our physicians have been notified of it, but, as yet, notwithstanding the fact that this charity was inaugurated twelve months ago, but very few have called for the services of the nurse. It is hoped that she will not be forgotten.

Truly yours,

HAMILTON OSGOOD.

WOOLLEN OR COTTON UNDERCLOTHING.

BOSTON, Dec. 12th, 1888.

MR. EDITOR: — The writer was early instructed, and has ever believed, that flannel (woollen) underclothes were not only healthy but were a necessity in winter, if not the entire year. The reasons were supposed to be obvious to any intelligent person.

But lately many of the physicians of Boston, and among them some of the leading lights, have been instructing their patients not to use woollen underwear *at all*, but to wear cotton, winter as well as summer; that if with these they wear proper outside garments when in the open air they will be healthier — freer from coughs, colds, rheumatism, and other afflictions the use of cotton has been supposed to aggravate and flannel to relieve.

This disconcerts all my preconceived notions of the fitness of things as regards underwear. What most surprises me is, that after trying it for a winter the patients themselves are enthusiastic advocates of cotton, declaring they were "never so free from coughs and colds," and suffered less from rheumatism, etc., as well as being more comfortable, than when they wore woollens.

What shall we do, we poor mortals who are thus between two fires, and who want to keep as healthy and comfortable as possible, but who hardly dare discard our flannels for fear there may be a funeral in the family before the winter is over?

Will not the JOURNAL enlighten its readers on this really important matter, and particularly

ONE OF THE LAITY.

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 8, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Diph. & Croup.	Typhoid Fever.	Scarlet Fever.
New York	1,526,081	700	351	21.56	13.86	1.12	7.28	4.06
Philadelphia	1,016,758	316	92	12.80	15.04	6.72	1.82	2.56
Brooklyn	751,432	304	128	16.50	14.19	8.91	2.31	3.52
Chicago	760,000	268	93	19.98	10.73	11.10	3.70	1.85
St. Louis	449,160	138	53	27.74	9.49	7.77	.37	.37
Baltimore	437,155	152	52	8.58	19.46	2.64	1.32	.66
Boston	407,024	164	33	10.37	18.91	4.88	4.88	—
Cincinnati	325,000	107	—	18.60	13.02	12.09	.78	—
New Orleans	248,000	142	46	21.00	11.90	3.50	.70	.70
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	82	35	8.54	10.98	2.44	1.22	—
Pittsburg	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	15	5	33.33	6.66	6.66	13.33	—
Charleston	60,145	37	11	25.90	—	2.70	8.10	—
Portland	40,000	19	2	5.26	10.52	—	5.26	—
Worcester	76,328	17	11	—	5.88	—	—	—
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	18	5	5.55	5.55	—	—	—
Fall River	61,203	20	8	5.00	25.00	—	—	5.00
Lynn	51,467	10	—	—	30.00	—	—	—
Lawrence	40,175	8	3	—	25.00	—	—	—
Springfield	39,952	—	—	—	—	—	—	—
New Bedford	36,298	15	5	13.33	—	6.66	—	6.66
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	8	1	—	—	—	—	—
Chelsea	27,552	7	1	—	14.28	—	—	—
Haverhill	24,979	8	5	12.50	12.50	—	—	—
Taunton	24,796	8	1	—	25.00	—	—	—
Brockton	24,784	—	—	—	—	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	7	1	—	—	—	—	—
Malden	18,932	5	1	20.00	—	—	—	—
Fitchburg	17,534	5	3	20.00	—	20.00	—	—
Waltham	16,651	6	—	—	—	—	—	—
Newburyport	13,839	5	1	20.00	—	20.00	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2591: under five years of age 957; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 426, acute lung diseases 379, consumption 336, diphtheria and croup 191, typhoid fever 58, diarrhœal diseases 13, scarlet fever 33, measles 34, malarial fever 26, whooping-cough 24, puerperal fever 14, erysipelas six. From diarrhœal diseases, New York ans 17, New York, 15, St. Louis, Baltimore, and Charleston two each, Brooklyn, Chicago, Boston, Cincinnati, and Malden one each. From measles, New York 22, Chicago six, Brooklyn two, Philadelphia, St. Louis, and Baltimore one each. From malarial fever, New York seven, St. Louis six, New Orleans five, Brooklyn and Baltimore three each, Philadelphia and Nashville one each. From whooping-cough, New York 13, Brooklyn four, Philadelphia three, Washington two, New Orleans and Charleston one each. From puerperal fever, New York seven, St. Louis three, Washington two, Cambridge one. From erysipelas, Chicago and St. Louis two each, New York and Nashville one each.

In the 28 greater towns of England and Wales, with an estimated population of 9,398,273, for the week ending November 24, the death rate was 18.2. Death- reported 3278: infants under one year of age, 825; acute diseases of the respiratory organs (London) 287, measles 239, diphtheria 57, whooping-cough 51, diarrhœa 49, fever 42, small-pox (Cardiff) one.

The death-rates ranged from 9.8 in Derby to 28.9 in Blackburn; Birmingham 13.7; Bradford 19.1; Huddersfield 17.1; Hull 12.4; Leeds 21 8; Leicester 13.2; Liverpool 21.1; London 17.3; Manchester 25.2; Nottingham 17.2; Sheffield 16.2.

In Edinburgh 14.1; Glasgow 17.4; Dublin 25.9.

The meteorological record for the week ending December 8, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday, Dec. 8, 1888.	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.	
	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.	Daily Mean.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	Duration. Hours & Min.	Amount in Inches
Dec. 2	29.98	32.0	46.0	23.0	67	60	64.0	W.	W.	12	14	C.	C.		.00
" 3	29.96	35.0	44.0	30.0	70	53	62.0	W.	W.	12	8	F.	O.		.00
" 4	29.79	34.0	38.0	33.0	72	90	81.0	W.	W.	7	8	N.	T.	4.30	T.
" 5	29.70	40.0	47.0	31.0	73	55	64.0	S. W.	S. W.	14	8	O.	O.	3.00	T.
" 6	29.81	33.0	42.0	29.0	82	79	80.0	N. W.	N. W.	12	24	F.	C.	5.00	.01
" 7	30.01	30.0	42.0	24.0	56	56	56.0	W.	S. W.	15	14	F.	C.		.00
" 8	30.11	33.0	45.0	36.0	62	68	65.0	W.	S. E.	12	12	O.	C.		.00
Means for the Week	29.91		43.0	29.0			67.0								

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM DECEMBER 8, 1888, to DECEMBER 14, 1888.

By direction of the Secretary of War Colonel JEDIDIAH H. BAXTER, chief medical purveyor, will proceed to St Louis, Mo., and Hot Springs, Ark., on public business connected with the Medical Department; on completion thereof to return to his proper station. Paragraph 13, S. O. 289, A. G. O., Washington, December 12, 1888.

TOWN, FRANCIS L., major, surgeon, is relieved from duty at the post of San Antonio, Texas, and will report in person to the commanding officer Presidio, of San Francisco, Cal., for duty at that station, relieving Major HENRY R. TILTON, surgeon, and by letter to the commanding general Department of Cal. Paragraph 19, S. O. 285, A. G. O., Washington, D. C., December 8, 1888.

TILTON, major, upon being relieved by Major TOWN, will proceed to West Point, New York, and report in person to the superintendent of the U. S. Military Academy for duty at station, relieving Major CHARLES F. HEIZMANN, surgeon. Paragraph 19, S. O. 286, A. G. O., Washington, December 8, 1888.

HEIZMANN, major, upon being relieved by Major TILTON, will proceed to San Antonio, Texas, and report in person to the commanding officer of that post for duty, and by letter to the commanding general Department of Texas. Paragraph 19, S. O. 286, A. G. O., Washington, December 8, 1888.

FINLEY, JAMES A., captain, assistant surgeon, is relieved from duty at Fort Bufort, Dakota Territory, to take effect upon the expiration of his present sick leave of absence, and will report in person to the commanding officer at Fort Assiniboine, Montana, for duty at that post. Paragraph 19, S. O. 286, A. G. O., Washington, December 8, 1888.

JOHNSON, RICHARD W., captain, assistant surgeon, is relieved from duty at Fort Adams, Rhode Island, and will report in person to the superintendent of the U. S. Military Academy, West Point, New York, for temporary duty at that station. Paragraph 19, S. O. 286, A. G. O., Washington, December 8, 1888.

LEAVE OF ABSENCE.

Leave of absence for fourteen days, to commence on or about December 24th, 1888, is granted Captain ALONZO R. CHAPIN, assistant surgeon U. S. Army. Paragraph 1, S. O. 293, Hdqrs. Div. of the Atlantic, Governor's Island, New York City, December 11, 1888.

NOTICE.

An Army Medical Board will be in session in New York City, N.Y., from May 1st to 31st, 1889, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application for the necessary invitation to the secretary of War, before April 1, 1889, stating the place of birth, place and State of permanent residence, and enclosing certificates based on personal knowledge from at least two persons of repute, as to American citizenship, character and moral habits. Testimonials as to professional standing, from Professors of the Medical College from which the applicant graduated, and of service in hospital from the authorities thereof, are also desirable. The candidate must be between 21 and 28 years of age, and a graduate from a *Regular Medical College*, evidence of which, his Diploma, must be submitted to the Board.

Further information regarding the examinations and their nature may be obtained by addressing the surgeon-General, U. S. Army, Washington, D. C.

JNO. MOORE, *Surgeon-General U. S. Army.*
SURGEON-GENERAL'S OFFICE, Washington, D. C., Dec. 1, 1888.

DEATH.

Died in Charlestown, Mass., December 13, 1888, Henry Holton Fuller, M.D., M.M.S.S., aged fifty-two years.

A PRIZE OFFERED TO MEDICAL MICROSCOPISTS.

In behalf of The American Association for the Study and Cure of Inebriety the sum of One Hundred Dollars is offered by Dr. L. D. Mason, Vice-President of the Society, for the best essay on "The Pathological Lesions of Chronic Alcoholism Capable of Microscopic Demonstration."

The essay is to be accompanied by carefully prepared microscopic slides, which are to demonstrate clearly and satisfactorily the pathological conditions which the essay considers.

Conclusions resulting from experiments on animals will be admissible. Accurate drawings or micro-photographs of the slides are desired.

The essay, microscopic slides, drawings or micro-photographs are to be marked with a private motto or legend and sent to the Chairman of the Committee on or before October 1, 1890.

Chairman—W. H. BATES, M.D. F.R.M.S., Lond., Eng.
(Chairman Med. Microscopical Soc., Brooklyn)
175 REMSEN ST., BROOKLYN, N. Y.

BOOKS AND PAMPHLETS RECEIVED.

Rambles in the Highways and Byways of a Doctor's Life. An address before the Graduating Class at the 92nd Annual Commencement of the Medical Department of Dartmouth College, November 22, 1887. By William S. Leonard, M.D., Delegate from the New Hampshire Medical Society.

A Treatise on Hysteria and Epilepsy, with some concluding observations on Epileptic Insomnia. By J. Leonard Corning, M.D., etc., etc. Detroit: George S. Davjes. 1888.

Case of Emperor Frederick III. Full official reports. By the German Physicians, and by Sir Morell Mackenzie. The Reports of the German Physicians translated by Henry Schweig, M.D. New York. 1888.

Tests for Diabetes Mellitus. By Palmer C. Cole, A. M., M. D., New York. Read before the Northwestern Medical and Surgical Society of New York, June 20, 1888. New York. 1888.

Transactions of the Obstetrical Society of London. Vol. XXX. for the year 1888. Part I. for January and February. London. 1888.

The Physician's Visiting List for 1889. Philadelphia: P. Blakiston, Son & Co.

Transactions of the New Hampshire Medical Society at the Ninety-eighth Annual Session, held at Concord, June 19 and 20, 1888.

Clinical Lectures on Diseases of the Urinary Organs, Delivered at University College Hospital. By Sir Henry Thompson, etc., etc. Eighth edition. London: J. & A. Churchill. 1888.

Morrow's Atlas of Venereal and Skin Diseases. No. 9. William Wood & Company, publishers, 56 and 58 Lafayette Place, New York.

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Second series. Volume fifty-third. London: Longmans, Green & Co. 1888.

The Medical News Visiting List, 1889. Thirty Patients per week. Philadelphia: Lea Brothers & Co. 1888.

Report of the Chief of the Bureau of Medicine and Surgery to the Secretary of the Navy, 1888. Washington. 1888.

The President's Annual Address. By Robert Battey, M. D., Rome, Georgia. Reprint. Philadelphia. 1888.

Nystagmus in Connection with Diseases of the Ear. By Charles J. Kipp, M. D., Newark, N. J. Reprint. 1888.

The Professional Canvasser, No. 1. Designed for and intended as an advertising medium of the interests of Fred D. Van Horen.

Hunterian Lectures on Tension as met with in Surgical Practice, Inflammation of Bone. And on Cranial and Intracranial Injuries. Delivered before the Royal College of Surgeons of England, June, 1888, by Thomas Bryant, F. R. C. S., etc., etc. London: J. & A. Churchill. 1888.

Original Articles.

RESUME OF TWO AND ONE-HALF YEARS' EXPERIENCE IN ABDOMINAL SURGERY.[1]

BY J. C. IRISH, M.D., LOWELL, MASS.

On former occasions I have presented a report, more or less complete, of nearly all the laparotomies I had made previous to 1886, and I have reported but two or three of my cases since that date. In this paper, therefore, I shall present a brief summary of my work in abdominal surgery from the beginning of 1886 to the present time. My whole number of cases, as shown in the appended tables, during this period is twenty five,—fifteen ovariotomies and ten abdominal sections for other affections.

The numbers attached to the cases indicate their chronological order.

Before calling your attention to the results as shown in the tables, and to those particular cases that seem to have an especial importance, it may not be amiss to say a few words of some of the details in the operation of ovariotomy. In that most important matter of all, the avoidance of any septic infection of the patient, the precautions I take will doubtless seem very inefficient to my antiseptic friends. I have simply attempted to secure an absolute cleanliness of the room with its contents, the patient, nurse, assistants, sponges, instruments, and silk.

Before an operation, the silk has been boiled, and then, with the sponges and instruments, washed in a 1 per cent. carbolic solution. Especial care has been taken in cleaning the eyes of all the needles. A solution of carbolic acid of this strength has been shown to be utterly useless for the destruction of bacteria of any kind, and cannot, therefore, in any sense be considered as antiseptic.

Yet among the twenty-five cases, whose histories I present to-day, there is but one death that can by any possibility be charged to septic infection, and in this case I believe that the fatal result was due to some other cause.

Again, of those that have recovered, the temperature charts show their entire freedom from any sepsis. During their convalescence most have had a temperature that never exceeded 100° and none were higher than 101°, and that for only a short time. A sudden rise of temperature of a degree or more, lasting a few hours, often accompanies the appearance of a sanguineous discharge from the vagina, that usually occurs two or three days after an ovariotomy. This has been termed by one writer a "uterine epistaxis."

An incision at least three inches long I have found more convenient than a shorter one, and at the same time amply sufficient for the removal of single cyst tumors and multilocular cysts that do not contain much solid matter. Still I have never seen a laparotomy in which the length of the incision has apparently modified in any unfavorable way the subsequent progress of the patient.

Therefore, whenever it is difficult to reduce the size of a multilocular tumor, with the hand in the main cyst cavity to an extent that allows readily its withdrawal, or whenever adhesions interfere, I believe it is much safer and better to sufficiently enlarge the incision than to employ strong traction. In this way all danger of rupturing the cyst, or of tearing off adhesions at places which will give troublesome hemorrhage, will be avoided.

The time occupied by an abdominal operation I believe to be an important factor in its influence upon the result.

The moment the abdominal cavity is opened and its contents begin to be handled or disturbed, the advent of shock is apparent in the patient, and is shown by an altered respiration and look of the countenance. This becomes more and more profound, so long as the manipulations continue. There is an immense difference, of course, in the degree of shock shown in different cases. Yet to a certain extent it is always present. The severity of it shows not only the present vitality or resisting power of the patient, but indicates, too, in some measure the future course of the case. Those cases in which the shock was profound, or long continued, or out of proportion to the severity of the operation have often gone badly with me. The reason that exsections of the intestines have been followed by so large a mortality is the great length of time the operation has required. The careful introduction of the thirty or forty Lambert sutures that are needed will occupy in expert hands at least an hour.

Post-mortem examinations after this operation have usually shown that death was not due to any failure of intestinal sutures or to peritoneal inflammation. The cause of death has been rather the shock and consequent exhaustion. Could this become an operation of fifteen minutes instead of an hour and a half, we might well expect from it many brilliant results. In the same manner, and almost to an equal degree, is the success of an ovariotomy or hysterectomy affected by the duration of the operative procedures.

In the closure of the abdominal wound, the advantage of bringing peritoneal surfaces in contact throughout its entire length is conceded. Primary union at the bottom of the incision is thus certainly secured, and the peritoneal cavity protected from the entrance of foreign matter. Some operators advise sewing together the peritoneal edges before closing the remainder of the wound. I think I accomplish the same purpose as surely, and much more rapidly, by introducing interrupted sutures about one-half inch from the cut edge of the peritoneum on each side, and bringing them out through all the overlying structures.

Table I. gives a résumé of fifteen ovariotomies, with thirteen recoveries and two deaths. The latter were Cases Nos. 31 and 42.

In Case 31 the patient had been confined to her bed two weeks. She had chills and fever followed by frequent profuse perspirations. She had become so much prostrated, that at the time of the operation her pulse could scarcely be counted and she was unable to lift her head from the pillow. Her temperature was 102°. It was evident that she was suffering from a severe septicæmia, due to the abdominal growth, and that her only chance of recovery was in its removal.

Unpromising as our patient seemed, I decided to go on with the operation, with the faint hope that,

[1] Read before the Middlesex North District Medical Society, July 25, 1888.

TABLE I.—OVARIOTOMIES.

Number.	Name.	Residence or Place of Operation.	Date of Operation.	Medical Attendant or Assistants.	Age.	Length of Incision.	Double or Single Ovariotomy.	Character of Tumor.	Remarks.	Recovered.	Died.
26	Mrs. S.	Nashua.	1886. March 10.	Drs. Dearborn, Currier and Prescott	29	8 in.	Single.	Multilocular.	Tumor consisted mainly of one large cyst, weight 42 lbs. No adhesions.	Recov.	
27	Mrs. R.	Lowell.	April 12.	Drs. Benoit, Parker, and Bradt.	26	3 in.	"	Unilocular.	Tumor weighed 17 lbs. No adhesions. Highest temperature after operation 99½°.	"	
28	Miss M.	Concord, N. H.	Nov. 4.	Dr. Walker.	49	8 in.	"	Fibroid tumor ovary.	Tumor weighed 8 lbs. Ascites. Firm adhesions within pelvis and above; general health very poor.	"	
30	Mrs. W.	New Boston, N. H.	Dec. 22.	Drs. Weaver, Dearborn, Dinsmore, and Blaisdell.	58	about 7 in.	"	Multilocular, nearly solid.	Extensive parietal and intestinal adhesions. Ascites. Tumor probably malignant. Died one year after of cancer of bowels.	"	
31	Miss P.	Carlisle.	1887. Jan. 7.	Drs. Marsh, Benoit, and Gage.	46	3 in.	"	Unilocular, contents pus.	Parietal adhesions at time of operation. Temperature 102o. Pulse could not be counted. Could not sit up in bed. Weight about 20 lbs.		Died 2d day.
36	Miss D.	Lowell.	June 16.	Drs. Pillsbury, Benoit, and Bell.	30	3 in.	"	Multilocular.	Extensive recent adhésions. Weight 25 lbs.	Recov.	
37	Miss D.	"	June 29.	Drs. Plunkett, Spalding, and Gage.	52	about 3 in.	"	Unilocular.	No rise of temperature. Weight about 30 lbs.	"	
38	Miss McG.	"	Aug. 13.	Drs. Plunkett, Fiske, and Bradt.	16	7 in.	"	Multilocular.	Ruptured cyst before operation. Weight 20 lbs	"	
40	Mrs. H.	Billerica.	Oct. 6.	Drs. Howard, Lane, Wood.	53	3 in.	"	Multilocular.	Weight about 15 lbs. Sac degenerate and ruptured during operation.	"	
42	Mrs. L.	Pepperell.	Dec. 20.	Drs. Heald, Fletcher, and Benoit.	43	about 6 in.	"	Multilocular.	Sac and contents degenerate. Sac torn in removal. Extensive pelvic and other adhesions, complicated with fibroid uterus. Death from intestinal obstruction.		Died 8th day
43	Mrs. M.	Iaconia, N. H.	1888. Feb. 29.	Drs. Dearborn and Wilber.	34	5 in.	Double	Dermoid.	Weight of tumor 30 lbs. Temperature and pulse remained normal after operation. No adhesions.	Recov.	
45	Mrs. F.	Charlestown, Mass.	April 3.	Drs. Sawin, Hammond, and Frazer.	31	about 6 in.	"	Multilocular.	Weight 32 lbs. No adhesions.	"	
46	Mrs. W.	Charlestown, Mass.	May 10.	Drs. Sawin, Hammond, Hanscom.	54	7 in.	Single	Parovarian.	Under broad ligament, behind peritoneum. Everywhere adherent. Enucleated. No pedicle. Weight 15 lbs.	"	
47	Mrs. G.	Dracut.	May 24.	Drs. Dutton, Heald, Sleeper.	42	9 in.	Double	Multilocular, nearly solid.	Weight about 25 lbs. No adhesions. No rise of temperature.	"	
50	Mrs. F.	Lowell.	July 5.	Drs. Chadbourne, Bell, Bradt, and Benoit.	32	4 in.	Single	Multilocular.	Weight 30 lbs. No adhesions.	"	

the cause of the septicæmia removed, she might rally and recover. The removal of the tumor was a very simple matter, and the entire operation was completed in twenty-two minutes.

The patient, however, continued to fail, and died two days after. The operation apparently neither retarded nor accelerated the fatal issue. Although the tumor, when removed, was a single cyst, it had evidently been multilocular. By degenerative changes the partition walls had become broken down, and the different cysts had coalesced.

The contents, about nine quarts in amount, had all the physical appearances of pus. Though no microscopical examination of the liquid was made to determine its character, still I believe it to have been purulent. The general symptoms and condition of the patient were such as we would have expected had there been a large collection of pus in the pleural cavity or elsewhere; viz., chills, fever, hectic, and prostration. When we recall that the lining membrane of ovarian cysts is usually covered with pavement epithelium, and that it otherwise closely resembles serous membranes, and that the latter, when acutely inflamed, always pour out pus or sero-pus, I think we may reasonably conclude that an ovarian cyst may sometimes contain pus, as well as a pleural cavity, or the closed peritoneum of a man. In short, these are examples of the formation of pus without the admission of air.

Case 42. Mrs. L., æt. 43. The patient had become very much enfeebled before the operation. Extensive degeneration of the cyst walls and contents had taken place, and had produced, as it always does, a marked depression of the general health. Extensive adhesions were found, especially within the pelvic cavity. The sac was torn in several places during its removal, and the case was still further complicated by a large amount of ascitic fluid and a fibroid uterus. The patient died on the eighth day, from intestinal obstruction. The cause of death was ascertained by a post-mortem.

Case 27. Before the operation, had frequent attacks of asthma and a moderate amount of albumen in the urine. Since that time the urine has become normal, and there has been no recurrence of the asthma. One year and one day from the date of the operation the patient gave birth to a child.

In Case No. 50, albumen was found in the urine, but since the removal of the tumor it has entirely disappeared.

Table II. contains five cases of hysterectomy, four for large uterine fibromata and one for carcinoma of the body of the uterus.

In the latter case I was compelled to treat the pedicle intraperitoneally. It could not be brought out at the lower angle of the wound. The patient did not completely rally from the shock of the operation, and died two days later. Whether any failure of the intraperitoneal ligatures contributed to the unfavorable result I do not know. Certainly no profuse hæmorrhage occurred. The generally enfeebled condition of the patient was sufficient to explain the failure of the operation.

In the four cases of hysterectomy for uterine fibroids, the pedicle was treated extraperitoneally. Dawson's clamp was used in three of them, and the rubber ligature in one.

Case 39. The fibroma extended nearly to the uniform cartilage, but had not perceptibly increased during the past two or three years. It gave the patient no trouble except by its weight and size.

TABLE II.—MISCELLANEOUS LAPAROTOMIES.

Number.	Name.	Residence.	Date of Operation.	Medical Attendant or Assistants.	Age.	Character of Operation.	Disease for which operation was made.	Remarks.	Recovered.	Died.
29	Mrs. M.	Lowell.	1886. Nov. 16.	Drs. Bass, Chadbourne, and Parker.	43	Hysterectomy.	Uterine fibroid.	Tumor weighed about 18 lbs. Pedicle treated with Dawson's clamp and pins.	Recov.	
32	Mrs. H.	Concord, N. H.	1887. Feb. 23.	Drs. Bass, Benoit, Bell, and Bradt.	69	Exploratory incision.	Uterine fibroid.	Incision 12 in. Many adhesions ligated. Adhesions posteriorly and in pelvis prevented removal. Tumor has not grown since operation. Growing rapidly before.	Recov.	
33	Miss F.	Peterboro, N. H.	March 30.	Drs. Cutter, Chase, Haig, Hodgdon, and Aldrich.	38	Hysterectomy.	Fibro-cystic tumor of uterus.	Tumor weighed about 18 lbs. Pedicle brought out in Dawson's clamp. At post-mortem only cause of death extreme dilatation of stomach.		Died 5th day.
34	Mr. P.	Lowell.	April 1.	Drs. Chadbourne and Johnson.	26	Laparotomy.	Circumscribed peritoneal abscess.	Reported elsewhere.	Recov.	
35	Miss H.	Lowell.	May 14.	Drs. Huntoon, Huntress, Bell.	50	Hysterectomy.	Carcinoma of body of uterus.	Ascites; been tapped, patient very week. Pedicle treated intraperitoneally.		Died 2nd day. Shock.
39	Mrs. B.	Nashua, N. H.	Aug. 17.	Drs. Dearborn, Wilber, Currier.	41	Hysterectomy.	Uterine fibroid.	At time of operation obstruction of bowels. Peritonitis. Tumor was gangrenous. Weight about 20 lbs.		Died 2nd day.
41	Miss W.	Lowell.	Oct. 22.	Drs. Chadbourne, Huntress, Bell.	2½ yrs.	Laparotomy.	Serous pus in abdominal cavity.	At 2 years of age had empyema. Cured by incision. Six months later pus in abdominal cavity. Cavity irrigated. Now perfectly well.	Recov.	
44	Miss P.	Clinton.	1888. March 29.	Drs. Cushing, Plunkett, Parker, Gage.	39	Hysterectomy.	Uterine fibroid.	Weight about 8 lbs. Pedicle treated externally. Rubber ligature and pins.	Recov.	
48	Mrs. C.	Cornish, Maine.	June 14.	Drs. Swasey, Chase, Wilson, and Norton.	54	Myomotomy.	Myoma from broad lig	Weight about 12 lbs Ascites; tapped several times. Extremely feeble.		Died 4th day. Suppresion of urine.
49	Mrs. S.	Lowell.	June 20.	Drs. Smith, Cushing, Parker.	29	Myomotomy.	Myoma.	Tumor weighed about 10 lbs., looked like a myoma. Microscope showed malignancy.		Died 4th day.

Therefore no operative interference had been advised. Suddenly, however, a violent peritonitis with great distention and obstruction of the bowels developed. Directly extreme prostration of the patient left no alternative except an immediate removal of the tumor. This was done three days after the advent of peritonitis, but still too late to save her life.

There was an extensive purulent inflammation of the peritoneum. Fully one-half of the fibroid, which had grown, without the formation of any pedicle, directly from the body of the uterus, had become gangrenous. I am entirely at a loss to explain this sudden necrotic change in the tumor. Necrosis of a part or the whole of the tissues composing an ovarian cystoma often occurs, and is an impending danger during the entire period of their development.

Yet I had never before supposed that subperitoneal fibroids were in the least liable to an accident of this kind.

The fact, however, that they may become the seat of extensive necrosis, and thus fatal to the patient, is of some weight in determining the advisability of their removal.

No. 41. This was a case of abdominal section in a child thirty months old for purulent effusion within the peritoneum. Six months before, she had empyema, which was treated by free incision and drainage. Her recovery seemed complete, and she was strong and well. But in September she again began to lose flesh and color. The abdomen became distended and gave distinct fluctuation. October 22nd, an incision three inches long was made, and a considerable quantity of serum mingled with pus escaped. The abdominal cavity was washed out with many quarts of warm water, and the incision entirely closed. I felt that it would be safer in this instance to pursue this course, rather than use a drainage-tube. For if the liquid should reaccumulate, the cavity could again be opened. Fortunately, there has been no return of the difficulty, and the child is now in perfect health. I have found several cases of empyema reported, in which a secondary purulent effusion has occurred within the peritoneum. In some of them no connection between the pleural and peritoneal cavities could be found.

PELVIC HÆMATOCELE:

OPERATION BY LAPAROTOMY; SUTURE OF CYST TO ABDOMINAL WOUND; DRAINAGE; RECOVERY.[1]

BY CHARLES B. PORTER, M. D.,

Professor Clinical Surgery, Harvard University; Surgeon Massachusetts General Hospital.

THIS case is presented as a contribution to the surgical literature on the treatment of large pelvic hæmatoceles by abdominal incision and drainage. T—— M——, aged 32, unmarried, entered the Massachusetts General Hospital, January 20th, 1887. Family history negative. Catamenia every four weeks; flow normal in amount, lasting four days, accompanied by considerable pain on the first and fourth, with vomiting. Last unwell, two weeks previous to entrance to hospital. No special sickness. For the past few weeks has been losing color, appetite, and strength. Complains of dyspnœa on exertion; bowels perfectly regular up to date. Felt as well as usual and worked all day yesterday. At 4.30 A. M. awaked from sound sleep by sudden, sharp abdominal pain, which was at first located in left iliac fossa, but soon shifted to the right side and back. At the same time obstinate bilious vomiting. Had small movement from bowels two hours subsequent to the attack. This morning swelling appeared in the right iliac region, and has since been growing gradually. Pain steady up to 12 M., requiring several subcutaneous injections of morphine. Since that time pain present in paroxysms, and there has been but little vomiting. No chill. Patient passed urine at 6 A. M. Since then required catheter twice.

Examination: Patient lies without difficulty, with legs extended, is anæmic, poorly nourished, anxious expression, tongue moist with slight coat. Pulse 68, fairly strong. Heart: soft systolic souffle in pulmonic area. Abdomen: a circumscribed swelling, dull on percussion, markedly tender, in right iliac fossa, extending to pubes; abdomen elsewhere soft, resonant, not tender. Per vaginam: cervix movable, pointing downward and backward, not continuous, with swelling felt externally.

Per rectum: marked tenderness in front and to the right, tumor felt anteriorly like cervix, extending not quite to middle line. Urine: normally acid, s. g. 1029. No albumen; sediment slight.

January 20th. Milk and lime water, and brandy, ordered alternately every three hours. Poultices to abdomen; deodorized tincture of opium, minims 15 to 20 p. r. n.

During afternoon of day of entrance she vomited everything taken into stomach; morphine and poultices gave much relief.

On the 21st of January, pain was almost entirely controlled by numerous subcutaneous injections of morphine. Required to be catheterized every six hours; had chill at 2 P. M. No vomiting.

Examination of the tumor showed increased size, extending two inches to the left of the middle line. No fluctuation, marked tenderness over whole of tumor. Per vaginam: general sense of pressure downwards; body of uterus pushed over forward and to the left; temperature 99°, pulse fairly strong.

Peptonized milk was ordered, four ounces every hour, and enemata of the same every six hours. No marked change on the 22nd or 23rd, although morphine was required. No vomiting, but distinct fluctuation felt over the tumor, which remained of about the same size. (The foregoing is an abstract from the medical records of the hospital.)

On the 24th of January, the third day after entrance, I was asked to see the case in consultation, and advised transference to the surgical ward for immediate operation.

Operation under most careful antiseptic precautions. Ether given; an incision made in the right iliac region along the inner half of Poupart's ligament and about an inch above it. On opening the peritoneum there came at once into view a tumor evidently cystic, its walls being very dark-colored and glistening. The cyst did not appear to be adherent, but its relations were not thoroughly

[1] Read at the meeting of the Suffolk District Medical Society, October 27, 1888.

explored, for fear of rupture of its walls, which appeared exceedingly tense. Using fine, round needles, and silk sutures, the cyst wall was stitched to the anterior parietal peritoneum in such a manner that the presenting portion of the cyst, about the size of a half dollar, was entirely shut off from the general peritoneal cavity. In this surface a free opening was made, and about three pints of dark, bloody fluid escaped. There were no clots. Exploration of the cyst discovered several flesh-like projections into its cavity, feeling like clots; these were not disturbed. The edges of the wound of the cyst were stitched to the abdominal wound, and a large drainage-tube, reaching to the bottom of the cyst, was fastened in. The cavity was then thoroughly washed out with a hot solution of sulpho-naphthol.

The night following the operation there was slight pain which was relieved by one-sixth grain of morphine. On the following morning patient was comfortable and the dressings were changed.

During the next three days the discharge was discolored; on the fourth day after the operation there was no blood in the discharge. There was some pus from the granulations of the wound, and all stitches were removed.

The subsequent progress of the case was without interruption and towards recovery, and ten weeks from the date of the operation she was discharged from the hospital well.

Dr. Whitney's report of the examination of fluid is as follows:—

Thin, bloody fluid, sp. gr. 1007, highly albuminous. No formed elements except blood corpuscles. Blood in large amount but did not coagulate. Probably ascitic fluid with blood.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M. D.

PATHOGENESIS OF SYMPATHETIC OPHTHALMIA.

Randolph[1] in an article which is prefaced by the consideration of the different theories of the pathogenesis of sympathetic ophthalmia, reports a series, or rather two series, of experiments intended as control experiments upon those of Deutschmann.[2] These experiments were prefaced by experiments tending to show that aseptic wounds of the eye did not progress to sympathetic ophthalmia. These trials were made upon dogs as follows:—

After sterilizing a cataract knife an incision was made at the upper border of the cornea, about half an inch below its junction with the sclera; the knife was then passed into the iris and cut upward entirely through the corneo-scleral junction as far as the ciliary region, and in several instances into the latter.

The cornea healed up promptly, so also the iris; the media always remained clear and not a symptom of cyclitis followed. For thirty-six hours after the operation there was slight photophobia and lachrymation, but these soon passed away. The dogs were kept under observation for four or five weeks and examined at different times ophthalmoscopically. The fundus was in every case normal, and further than the fact that the iris was often prolapsed and healed into the wound, no pathological change was found.

Randolph's first series of experiments were made upon dogs, as he supposed that they would be less likely to succumb to the effects of a general infection, and in consequence would enable him to follow out more accurately the theory of Deutschmann. His method was the same as that employed by Deutschmann, and consisted in injecting a suspension of staphylococcus aureus into the corpus vitreum. The instruments employed were thoroughly sterilized previous to the operation. About two minims of the inoculation fluid was injected. After fixing the ball of the eye with forceps, the eye was pulled forward and a hypodermic needle was passed in half an inch posterior to the ciliary region. The organisms were obtained from a furuncle and were identical with the staphylococcus aureus of Rosenbach. Fifteen experiments were made in all. In nine of the cases the eyeball ruptured and the contents were disgorged. The other six cases had cyclitis, choroido-iritis, ending with phthisis bulbi. The trouble remained local. All the cases were examined every day with the ophthalmoscope. Never was anything unusual observed about the second eye, except that in two cases there was noticed, twenty-four hours after inoculation, an enlarged condition of the retinal vessels, associated with a general redness of the papilla. This disappeared at the end of three or four days. The observer considered it a reflex engorgement of the vessels, due, without a doubt, to the violent inflammation going on in the other eye, and that there is no reason to believe that it could ever have developed into a condition similar to that of the first eye. A most thorough examination of the optic nerve and of the chiasm failed to find any organisms.

Prof. Deutschmann's experiments were made upon rabbits; and thinking that as his experiments were made upon dogs, and that this difference might impair their value as control experiments, our author determined to repeat them upon rabbits.

In this new series of experiments the inoculation material was obtained as follows. A case of panophthalmitis was selected which had resulted from a piece of iron which flew into the patient's eye while working on the railroad. A few drops of pus were obtained from this case, and from them were made plate cultures after Koch's method, and finally a pure culture identical in every respect with the staphylococcus aureus of Rosenbach was obtained. The technique was the same as in the previous series of experiments. Fifteen rabbits were thus inoculated. One of these rabbits died forty-eight hours after inoculation, with all the symptoms of a general infection; and another at the end of ten days after inoculation. The latter gave evidences of brain trouble before death in spasmodic movements of the neck and inability to move without falling forward. Both animals were very young, hardly more than a month old, and much too young for such experiments. The other thirteen cases were killed at periods from fourteen days to two months after inoculation. Ophthalmoscopic examination was made every day for the first three weeks; and afterward never were more

[1] Archives of Ophthalmology, June, 1888.
[2] See these papers, vol. 116, p. 176; vol. 115, p. 521.

than three days allowed to pass without such an examination. Never did the fellow eye show the slightest symptom of sympathy. The fundus remained unchanged; perfectly normal. Every one of the cases suffered from irido-cyclitis in its most typical form. Microscopic examination of the nerves was made in both these series; and our author states that in the first five experiments on dogs he was perfectly convinced that he had a neuritis extending from the affected eye around to the fellow eye by the way of the chiasm.

He submitted the sections to skilled microscopists, and they agreed with him. The suggestion was made, though, that he kill a dog and study the normal parts. He did so, and to his surprise found that the normal optic nerve of the dog was most rich in nuclei — nuclei which gave to the nerve the appearance of dense, round-cell infiltration. He found also that these nuclei decreased as the chiasm was approached from either eye, and, as this is the appearance of the cell infiltration described by Deutschmann, hints that that observer might have mistaken the normal condition of the nerve for a neuritis descendens and ascendens. Randolph also draws attention to the fact that all of Deutschmann's cases, in which there were changes of the fundus, papillitis, retinitis, and choroiditis, died of a general infection, and says that in such cases the kidneys and heart and entire circulation are alive with pus cocci, and consequently it is not strange the fundus should be the seat of inflammatory changes, especially when we consider how very liable it is to participate in vital changes in the general system.

PATHOLOGY OF DIABETIC EYES.

Deutschmann[3] describes the appearances found post-mortem in the eyes of four individuals who died while suffering from diabetes mellitus. Micro-organisms were searched for in vain in all four cases. The most remarkable feature in all four cases was the proliferation and œdematous swelling of the layer of the pigment cells of the posterior surface of the iris. A similar observation has been made by Becker, and also by Kamocki at the Heidelberg Congress in 1886. In addition to this process, which extended in a lesser degree to the pigment of the epithelium of the retina, the atrophy of the iris root, with increase of its nuclei and connective tissue, and the escape of the pigment into the anterior chamber, were the important pathological appearances.

From these observations Deutschmann concludes that either a long-continued hyperæmia, or else actual inflammation of the iris must have existed, with an accompanying proliferation of its layer of pigment cells. This must have been an altogether insidious process, which led to connective-tissue hypertrophy, and consecutive atrophy without clinical symptoms. The condition of the retina lends probability to this hypothesis. The precise cause of this process is uncertain, and Deutschmann contents himself with asserting that it stands in some as yet unknown connection with the diabetic dyscrasia. He calls attention to the tendency which the epithelial structures exhibit towards necrosis in diabetes mellitus, and points out the analogy between the changes which occur in the lens and in the cells of the pigment layer of the iris. All the lenses exhibited the peculiarities described by Becker, in the reaction of the nuclei of the cells to staining fluids, and the molecular disintegration of the nuclei themselves. Every stage was represented, from healthy, normally stained nuclei to complete disorganization; the latter being the commonest phenomenon. From this Deutschmann concludes that the lens (a purely epithelial structure) owes its opacity in diabetes to the same necrotic tendency that is shown by all the epithelial tissues in this dyscrasia. So long as the epithelium which constitutes the lens is alive and healthy, no pathological process of diffusion takes place, no matter though both aqueous and vitreous contain sugar; but when the necrosis of the lenticular cells begins, abnormal diffusion currents are set up (just as in the cadaver), which produce opacity and swelling of the lens.

[3] Von Graefe's Archiv für Ophth., xxxiii. 2, p. 228; Ophthal. Review, September, 1888

PHYSIOLOGICAL AND PATHOLOGICAL CONDITIONS OF THE PUPIL.

Jessop[4] has published an admirable series of lectures upon the physiological and pathological conditions of the pupil and accommodation, of which the substance is that the intra-ocular muscles are two circularly disposed muscles — the pupillary and ciliary, and in mammals consist of unstriped muscular fibre. They are supplied by two antagonistic sets of nerves — the short and long ciliary. The short ciliary induce on stimulation extreme contraction of both muscles, and the long ciliary produce the opposite effect, namely, relaxation of the muscles. The fibres of the short ciliary nerves can be traced to different collections of cells as centres, thus separating the action of the pupillary from ciliary muscle. In the same way the long ciliary nerves are connected with different centres; by the visceral fibres of the fifth they are connected with a centre in the medulla for the ciliary muscle, and by the cervical splanchnics and the second dorsal nerve with the spinal cord and medulla for the pupillary muscle. The actions of the pupillary muscle are to contract, to direct, and consensual light reflex, and in association with accommodation, and besides these to dilate to sensory reflex; the actions of the ciliary muscle are to contract on accommodation, and to dilate on relaxation of accommodation. Thus the ciliary muscle acts normally in association with the pupillary, and the pupillary may either act by itself, or in association with the ciliary according to the stimulus provoking the action.

Pathological bilateral mydriasis may be present as a symptom in typhoid fever, aortic insufficiency, commencing insanity, meningitis (after initial contraction) cerebellar disease, hydrocephalus, helminthiasis, epilepsy (tonic stage), migraine, middle meningeal hæmorrhage. The chief diseases characterized by bilateral equal myosis are hæmorrhage into upper part of pons, general paralysis of the insane, meningitis, anæmia of the brain, paralysis agitans, venous obstruction as in mitral regurgitancy, pneumonia, typhus, variola, epilepsy (sometimes at commencement), anterior poliomyelitis.

[4] Ophthalmic Review, July, 1888.

Unequal pupils are often found in cases of apoplexy, acute meningitis, chronic and acute alcoholism, general paralysis of the insane, locomotor ataxia.

Hippus, a condition of the iris characterized by choreic spasms producing rapid contraction and dilatation of the pupil, is seen in cases of epilepsy, mania, general paralysis of the insane, the commencement of sympathetic ocular disease, and cerebellar tumor. These movements are often associated with nystagmus, especially of central origin.

Drugs influencing the pupil when taken internally, but not acting locally, are morphia, strychnia, curare, quinine.

CONCOMITANT CONVERGENT STRABISMUS.

Lang and Barrett[5] have continued their investigations of concomitant convergent strabismus, and state that, in regard to the possibility of alteration of vision in the squinting eye, in fourteen cases they obtained the distant vision in the squinting eye after accurately correcting the refraction, then prescribed the fully correcting glasses, which were worn by the patients for months or years. The distant vision was then tested again, with the following results. Of the fourteen cases, in eleven the constant use of glasses failed to effect any improvement whatsoever in persons varying from three months to five years, although in these eleven cases the squint was cured in eight cases, and improved in the other three, and although the resulting vision was binocular in two of the cured cases; in the other three cases, including one case of alternating strabismus with one amblyopic eye, some improvement of distant vision resulted. Our authors made careful inquiry for the existence of strabismus in the brothers or sisters of the squinting patient in eighty-seven cases. It was found that in sixty-two cases the patient was the only member of the family affected, the average number of persons in each family being five. In twenty-five cases more than one member was affected. In these cases the average number of persons in each family was six. Concerning the existence of strabismus in the parents or parents' families, investigation was made in seventy-seven cases with the following result: —

In fifty-five (71 per cent.) of the cases a negative reply was returned. In twenty-two (29 per cent.) a definite affirmative reply was obtained.

Our authors believe in the possibility of the transmission of squint, and cite the following case: —

A man who squinted married a woman who did not squint, and had a large family of children, of whom one, a daughter, who squinted, married a man who squinted; they had seven children, two of whom had strabismus. Of the children of the original marriage, a daughter, who did not squint, married a man who did not; they had ten children, of whom three had strabismus; one of these, a daughter, who squinted, married a man who did not, and they had two children, both of whom had strabismus. The age at which patients began to squint was investigated in one hundred and ninety-five cases. The average age at which it began was 3.4 years. In thirty-six cases it appeared in the first year of life, in thirty-four cases it appeared later than the fifth year, and in three cases beyond the tenth year. Of these thirty-four cases no less than ten were cases of alternating strabismus, in which vision in each eye was excellent. It is stated in conclusion that in a fair number of such cases of late origin, the extinction of vision by nebulæ seems to cause the strabismus to appear. With regard to the influence of atropine on convergent strabismus, the angle of convergence was measured before and during complete mydriasis and paresis of accommodation, with the following result. Of thirty-eight such cases the angle remained unaltered in eleven, was increased in eleven, and diminished in sixteen.

In order to ascertain whether the effect of atropine is of any service in prognosticating the effect of the constant use of glasses, a number of cases were noted. Of four cases in which atropine increased the strabismus, in three the use of glasses failed to produce any improvement. In the fourth case the angle was reduced from 30° to 8° whilst the glasses were worn, and to 15° when they were removed. Of six cases in which the atropine produced no alteration, the use of glasses effected material improvement in only three. In these the average improvement was 15° whilst the glasses were worn, and 12° when they were removed. Of five cases in which atropine improved the strabismus, the use of glasses produced material improvement in every case. The average improvement was 16° whilst the glasses were worn, and 16° degrees when they were removed.

DIFFERENTIAL DIAGNOSIS OF THE ELEVATORS AND DEPRESSORS OF THE EYE.

Mauthner,[6] in an elaborate paper on paresis of the elevator and depressor muscles of the eye, gives the following differential diagnosis of the paralyses of the four recti and the four obliqui concerned in elevating and depressing the globes. If there is diplopia of the upper half of the field, single vision in the lower half of the field, an elevator is paretic. To determine which muscle is affected, find the place of the greatest vertical distance between the double images, then —

If the greatest distance is to the left and above —

1. Image of the left eye higher: rect. sup. sinist.
2. Image of the right eye higher: obliq. inf. dexter.

If the greatest distance is to the right and above —

1. Image of the right eye higher: rect. sup. dexter.
2. Image of the left eye higher: obliq. inf. sinist.

If there is diplopia in the lower half of the field, single vision in the upper, a depressor is paretic. To determine which muscle is affected, find the greatest vertical distance between the double images, then —

If greatest distance is to the left and below —

1. Image of left eye lower: rect. inf. sinist.
2. Image of right eye lower: obliq. sup. dexter.

If greatest distance to right and below.

1. Image of right eye lower: rect. inf. dexter.
2. Image of left eye lower: obliq. sup. sinist.

[5] The Royal London Ophthalmic Hospital Reports, July, 1888.

[6] Wien. Med. Wochenschrift, Nos. 24, 25, 1888.

THE LIGHT PERCIPIENT ORGANS.

Gunn,[7] in an elaborate article on the nature of light percipient organs, and of light and color perception, reaches the following conclusions.

1. That all light percipient cells are modifications of epithelial cells, or developed from the same embryonic layer which forms them.

2. The ends of these cells corresponding to the cuticle have generally cuticular structures formed in the shape of rods.

3. That the opposite ends of these cells are either directly continued as nerve fibres or are connected with ganglion cells, and ultimately with nerve-fibres.

4. That pigment is practically always present, either in the light percipient cells or in close connection with them.

5. That all forms of vegetable and animal protoplasm sensitive to light are acted on by the shorter waves corresponding to the violet end of the spectrum, and that the same holds good in a marked degree in the case of all those light percipient cells as yet known to act to light.

6. That the property of phototaxis is universally influential in the manner in which these cells arrange themselves, and in the direction in which they contract upon exposure, *i.e.*, parallel to the incident light in both cases.

7. That the pigment cells have evidently the property of secreting chemical fluids according to their exposure to light and shade, and that the pigment contained in them is doubtless of service, as being a light absorbent, and thus aiding a rapid transformation of light energy into protoplasmic action.

8. That the result of the action of the pigment cells on the segments of the light percipient cells may be demonstrated by the electrical current produced.

9. That seemingly the strength of this current depends upon two factors, viz., 1. the activity developed in the pigment cell under the action of light, and 2, the depth to which the cone is imbedded in it, *i. e.*, the extent of the surface exposed to its action.

10. That in the case of the vertebrates at least, this resultant current is greatest on exposure to yellow light, *i. e.*, to visible waves of medium length and refrangibility.

11. That the differences in the action thus produced, and consequently in the nerve current transmitted to the visual centre, are associated in our minds with sensations of differences of color.

12. That as regards the stationary rods the action induced will probably depend upon the amount of destruction of retinal purple, and the consequent demand upon the pigment cell. As this action is known to depend more on intensity or wave height than on wave length, it is improbable that the rods have any higher function than that of transmitting impressions which will be appreciated in our conscious centres as variations in light intensity.

13. The function of the retinal purple is probably mainly to protect the pigment epithelium from too great exposure, and thus to modify its secretion and its action on the end-organs imbedded in it.

Royal London Ophthalmic Hospital Reports, July, 1888.

Clinical Memoranda.

SPASM OF THE BRONCHIAL TUBES,

LIKE SPASMODIC ASTHMA, EXCITED BY A FOREIGN BODY INHALED INTO THE TRACHEA DURING AN EPILEPTIC SEIZURE.

BY PROF. J. M. DACOSTA, M. D., PHILADELPHIA.

[AT the Pennsylvania Hospital, Prof. J. M DaCosta made the following clinical remarks, at his lecture on December 1st, upon a case of spasm of the bronchial tubes, simulating a severe attack of spasmodic asthma following an epileptic fit, during which a piece of apple was inhaled into the air-passages.]

This case is peculiar, in my experience unique, in character. This boy, about sixteen years of age, was brought to the hospital five days ago by the police patrol, who found him lying on the street in an epileptic fit. Although perfectly conscious when admitted, he was suffering from great difficulty of respiration. He answered questions rationally, but with effort, owing to want of breath. We learned, subsequently, that the patient had received an injury by being struck on the left side of his head by a brick, some six years ago. About two years later convulsions occurred, which were epileptic in character, and gradually became frequent. He is certain that the epileptic attacks did not begin to appear until two years after he was struck upon his head. In spite of medical treatment, the convulsions persisted, and finally he sought surgical advice. Two years ago Dr. John Ashhurst trephined him at a point which can still be recognized by a depression. It is on a line with the border of the left ear, about the centre of the parietal bone. He says that at first there was no improvement from the operation, but that for the last six months he has had much relief; the convulsions now recur only about once in three weeks, though he takes no medicine; before the operation he had them sometimes twice a day. It is a fair inference that he was benefited by the operation, although improvement was not evident until eighteen months subsequent to its performance.

The special point to which I wish to call your attention is this: on the 26th of November, the day on which he was brought to the hospital, he had a fit and fell senseless upon the street, and as he was recovering from the attack he experienced great difficulty in breathing. When he was brought to the hospital he was suffering intensely; his respiration was labored and noisy like that of asthma, and his features showed that he had great respiratory distress. He was immediately seen by one of my colleagues, who happened to be present, and who kindly prescribed for him. Upon examining the lungs, it was found that the breathing was noisy, the inspiratory murmur weak and the expiratory exaggerated and prolonged. It was especially on the left side that the inspiratory sound was feeble; the percussion resonance was everywhere good. He was distressed and struggling for air, and in fact presented the symptoms and physical signs usually found in a case of spasmodic asthma. The heart was accelerated in its action and weak, but gave no evidence of organic disease. He coughed but occa-

sionally, and he had no fits of coughing or of suffocation. He was ordered to take tincture of belladonna in ten-drop doses, with a little ammonia, and subsequently smaller doses of belladonna with digitalis. His chest was dry-cupped, and he was placed in bed with his head and shoulders somewhat elevated.

These prescriptions, which were based on the thought of the relief of spasm, were followed by great benefit; his breathing became better and easier and he went to sleep. It looked as if the antispasmodics had done their work and that the attack had yielded; certain it is that he had no fits of suffocation or alteration of voice, but about twelve hours after he came in, in the middle of the night, he had a terrible attack of dyspnœa lasting about fifteen minutes, finally terminating, during a paroxysm of coughing, by the expulsion of this piece of apple, while the resident physician was preparing to make a laryngological examination. (The specimen shown was an irregularly shaped piece of apple, slightly smaller than it was, owing to the effects of the alcohol in which it had been placed for preservation; about seven-eighths of an inch in length and about one-half by five-eighths in cross section.) We then got the strange history that when the epileptic fit seized him he was eating an apple. During the convulsions this piece was drawn into the windpipe, and, owing to the insensibility of the larynx during the attack, it passed into the trachea down to its bifurcation and obstructed the left bronchus more than the right. Since the expulsion of the foreign body he has had no sign of asthma, and seems well, but he was allowed the use of bromide in order to prevent the occurrence of an epileptic fit.

There are several points of clinical interest in this case. One is the way in which ordinary spasmodic asthma was simulated by the symptoms produced by a foreign body in the air-passages. What was curious was that he had also the physical signs of asthma: noisy, labored respiration, intense dyspnœa, weak inspiration, prolonged expiration, with clearness upon percussion. With the exception of râles he had the signs which we would expect to meet with in a case of asthma. If you ask, "To what were these symptoms due?" we must answer, "To a condition of spasm of the bronchial tubes caused by this foreign body." Therefore, when I say that this is like a case of spasmodic asthma, I may go even further and say that it really was a case of asthma provoked by the presence in the bronchus of this piece of apple. There is almost identity of pathological condition; but instead of the irritant being of internal origin it was this foreign body.

From the liberal use of belladonna and free cupping of the chest, there resulted evident relief of the symptoms; the spasm evoked by the foreign body yielded, the patient breathed more easily, and even fell asleep. Please note, therefore, that the means employed largely removed the irritation, certainly the spasm, although the irritant remained.

Lastly, I may call your attention to the fact that the foreign body had passed the trachea, because if it had lodged in the windpipe it would have given rise to greater difficulty in breathing than even existed, to fits of coughing and strangling, and to impairment of voice. His utterance was distinct, though somewhat feeble on account of his respiratory distress. I regret that no laryngoscopic examination was made at first. He was in such distress in bed that it was not attempted, and when about being made he expelled the apple. At present his breathing is natural. Upon auscultation, the respiratory sounds are heard on both the right and left sides, the expiration is neither harsh nor prolonged. The breath-sounds on inspiration are perhaps a little less distinct at the lower part of the left lung than at a corresponding point upon the opposite side, but the percussion note is clear; there is nothing abnormal. The heart, which was feeble, has regained its tone.

A CASE OF INTESTINAL OBSTRUCTION: LAPAROTOMY; DEATH IN THREE HOURS; AUTOPSY.[1]

BY MAURICE H. RICHARDSON,
Surgeon to Massachusetts General Hospital.

The following case occurred in the practice of Dr. H. E. Marion, of Brighton, who has kindly sent me the following history: —

"L. H. A., 57 years of age, has been employed in the silk department of C. F. Hovey's for past twenty-five years. Previous history very good.

June 30th, 1888, he called with a friend at my office, giving the following history: —

On the 28th he had a slight chill; since then he has felt uncomfortable; sensation of fullness as if there were a twist (these were his own words) in the bowels. A cup of tea or a very little food made him feel full and uncomfortable, as if he had partaken of a large meal. Was obliged to unbutton his waistband on account of the fullness. He ascribes these uncomfortable symptoms to having drank in rapid succession several glasses of ice water during one of the recent hot days.

Pulse 100, temperature 99.4 degrees. Abdomen somewhat tympanitic and slightly tender on pressure in both iliac and hypogastric regions. He was advised to confine himself to liquid diet in small quantities, and often; to remain quiet during the following day (Sunday), and take elixir pepsin, strychnine, and bismuth, and let me know if he was not quite relieved.

I remarked to the friend that I saw nothing serious in his symptoms except the frequent pulse, and I hoped he would let me know in the morning if he did not feel much better. They spent a half hour socially with myself and wife, and he seemed in his usual good spirits.

July 2nd, 5 A.M., I found him in a good deal of pain, which was soon relieved by hot fomentations and one-fourth grain morphia. The day before (July 1) he felt so well that, contrary to orders, on the invitation of a friend, he took a ride towards evening, and on returning felt as if he was going to have a chill, which was prevented by going directly to bed. The night was passed tossing and turning, with more or less pain in bowels. Three liquid stools. Pulse 90, temperature 97.4 degrees. Abdomen but slightly tympanitic, with less resonance in left inguinal region. Urine, specific gravity 1030, acid. No albumen and no sugar. He spent the afternoon reading, and in the evening expressed

[1] Read at the meeting of the Suffolk District Medical Society, Oct. 27, 1888.

himself as being very much better, so much so that I jokingly remarked, as I left him, that I guessed he had cheated us out of a Masonic funeral.

July 3rd, 2 A.M. Has been in a good deal of pain since midnight. Took morphia at 12.30 and just before I came in, each time one-fourth grain, with no relief. Pulse 90, temperature 96 degrees. Hot fomentations, enema of hot water, and repeat morphia. Being obliged to go in town, I stopped on my way and asked my brother to run in and see him at eleven o'clock and give a hypodermic of morphia if he was not already relieved. My brother found him in collapse, and remained with him until I returned 12.30. By hypodermic of morphia and brandy, with hot bottles, reaction was well established when I returned. At two o'clock P.M. there was no special change in symptoms, except that the dulness in the left inguinal region was more marked, and a tumor could be made out extending from iliac crest for about four inches towards median line. Pulse 120 to 130.

Dr. E. N. Whittier saw him at eight o'clock in the evening, confirmed the physical signs as above, but hoped some of it might be due to cellular infiltration. Obstruction of the bowels was evidently the cause of it. On account of bad pulse, etc., it was thought best to use stimulants freely and watch the patient a little longer. During the following day, July 4th, he seemed more comfortable. During the night of July 4th he began to vomit. Physical signs had remained unchanged, and he had had no stool.

Early in the morning of July 5th I telephoned for Drs. Richardson and Cabot to come out prepared to perform laparotomy. Drs. Whittier and O. H. Marion were also present at the consultation. All agreed that the only chance lay in making an exploratory incision. This was explained to the patient, with the gravity of the case. He accepted the chances with, in his own words, 'Anything you say, doctor,' made his will, and gave himself up to the operation, from which he never fully rallied."

I was called to see this gentleman on the morning of July 5th, 1888, in company with Drs. Cabot and Whittier. The abdomen was a good deal distended, and everywhere tympanitic except to the left of the linea semilunaris of the left side, where it was somewhat dull. There was a distinct resistance in that region, almost precisely like that found in the examination of the case of volvulus reported by Dr. Warren (see *Boston Medical and Surgical Journal*, Oct. 18th, p. 380).

The resemblance was so strong between these two cases that I suggested volvulus as a probable explanation of the symptoms. Though the general condition of the patient was bad, and the prognosis very unfavorable, it was the unanimous opinion that laparotomy afforded the only chance for relief.

An incision of sufficient length was made in the left linea semilunaris, its centre being about opposite the umbilicus. On entering the abdominal cavity, a coil of dark purple intestine presented itself, so tense and distended as to feel hard and resisting, and evidently the cause of the diminished resonance and increased resistance over that region.

It seemed to Dr. Cabot and myself that this portion of gut, about twelve inches in length, was distinctly twisted, and that this was the cause of the stagnation of circulation. The blood-supply had been cut off so long, from this or other causes, that there was a marked fæcal and gangrenous odor to the whole.

The coil was next untwisted, and the abdominal cavity closed with a good deal of difficulty over the distended intestines.

The patient rallied somewhat from the operation, but died a few hours later.

At the autopsy, performed by Dr. Marion and myself, in addition to the strangulated condition of the bowel already referred to, the mesenteric vein was found to be filled with thrombus. The whole mass of intestines was taken to Dr. Fitz, who reported that the mesenteric vein for that portion of the intestine was filled with thrombus as far as the liver, and that it was impossible to say whether the twist caused the thrombosis or whether it was a case of simple thrombosis of the vein antecedent to the twisted condition of the bowel.

Drs. Cabot and Marion, as well as myself, who saw the condition at the operation, thought it unmistakable that there was a distinct twist. If there was none, and the whole trouble was caused by thrombosis, the case is interesting from the fact that symptoms of intestinal obstruction demanding laparotomy were or may be due to mesenteric thrombosis.

It is important in such cases to explore as early as possible, not only to relieve the condition of obstruction, but also to prevent gangrene of the affected part.

In case the bowel is gangrenous, the question arises between excision and suture, and the formation of an artificial anus. Secondary suture after artificial anus has thus far been more successful than immediate suture with return of the bowel to the abdominal cavity. In case, however, the strength of the patient is good, I believe it will be found to be better surgery to perform primary resection and suture than to do the palliative operation. I believe it to be true that the danger of the primary and single operation will not be as great as the sum of the dangers of artificial anus and secondary suture.

A CASE OF COMPOUND COMMINUTED FRACTURE OF THE SKULL.[1]

BY F. B. HARRINGTON, M. D.

APRIL 10, 1888, H. W., twenty-nine years old, a brakeman, was struck by an overhead bridge. He was seen to fall from the car, and was found in a stupid and dazed condition, but not unconscious. He was brought to the Massachusetts General Hospital, where I saw him. There was a small transverse wound, half an inch long, just above the right superciliary ridge. The soft parts of the forehead and the eyelids were much swollen, so that no depression of the bone could be made out. There was crepitus over a considerable area, as if the bones were extensively comminuted.

The patient was dull, but answered questions coherently. He complained of severe pain in the

[1] Read at the meeting of the Suffolk District Medical Society, October 27, 1888.

head. The pupils could not be seen because of the swelling of the lids. In an hour he had become somewhat more stupid, and there were occasional twitchings of the left side of the body.

The head was carefully shaved and scrubbed with ether and with corrosive sublimate solution. A transverse incision four inches long was made. On coming down to the surface of the bone it was found to be extensively comminuted. The fragments were in irregular positions — some depressed, others elevated.

It became necessary to extend the incision at right angles to the original incision. A considerable amount of the frontal bone was removed, including both frontal sinuses and the orbital ridge, with about half an inch of the orbital plate on the left side. Some of these pieces were overlapped by others, and more or less depressed. At one point the dura was perforated by a fragment, which, pushing through it, pressed open the cortex. There was some hæmorrhage from this wound in the dura, which was controlled by a catgut ligature. The extremities of the incision were brought together by sutures, but the greater part of the wound was left open, and packed with iodoform gauze.

The patient rallied slowly from the ether, and remained in an apparently comatose state for several hours. There was no return of the muscular twitchings, but he became violently delirious toward evening. On the following day he was better, but restless and delirious. The wound was dressed and was found perfectly healthy. In a few days there was some delirium. The wound healed rapidly. Ten days after the accident the patient had become quite rational, and gave a correct account of the accident, but was somewhat childish and inclined to somnolence. He continued to improve rapidly, and on June 2nd the wound was entirely closed except a small granulating spot.

The hospital record of June 13th says: "No head symptoms whatever. Declares himself to feel as well as ever. Wound entirely healed. Extreme depression in the frontal region. The cicatrix pulsates slightly. Discharged."

There are several points of interest about this case.

First. The retention of consciousness after so severe an injury. Apparently there was no time at which the patient lost consciousness until the ether was administered.

This illustrates very forcibly the importance of not attempting to measure the extent and degree of a head injury by the subjective symptoms.

A second point of interest is the irregularity of position of the comminuted fragments. It seems probable that, from the number and position of the fragments, necrosis of some of them must have occurred, even if there had been no sloughing and suppuration of the soft parts.

Moreover, it seems probable that if the fragments had not been removed, and the bleeding from the wounded dura controlled, there would have been fatal pressure from blood-clot.

If none of these had happened, the depressed fragments would certainly have produced subsequent brain irritation, with its attendant miseries.

The lack of symptoms of paralysis was due, I think, to the fact that the motor area of the cortex was not injured or pressed up. It seems probable that the delirium which followed etherization was due, not to the operation, but to the concussion taking place at the time of injury.

Such an amount of the skull might be removed by trephining the uninjured bone, as in case of a brain tumor, but it is rare that so extensive a comminution of the bone by injury is followed by recovery.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SUFFOLK DISTRICT.

Stated meeting at 19 Boylston Place, Saturday, October 27, 1888.

The President, Dr. John Homans, was in the chair.

A paper was read by Dr. C. W. Townsend on

ACUTE LOBAR PNEUMONIA IN CHILDREN.

Dr. Francis Minot said there were two points in Dr. Townsend's interesting paper to which he wished to allude. First, in connection with the etiology of pneumonia, it was surprising how often its infectious origin could, one might almost say, be demonstrated by the fact that we find several cases in one house, not merely in dispensary practice, but also in dwellings of a better sort and presumably in good sanitary condition. He had met with four cases, three of which were fatal, occurring in rapid succession in a recently built house in a fashionable quarter of Boston. On investigation it was found that a bad leak in the soil-pipe allowed the escape of filth upon the cellar floor, and of sewer gas from the drain into the house. In another house, whose sanitary condition was suspicious, he had had four cases of pneumonia in children, one of whom had a second attack two months after the first. The other point Dr Minot wished to speak of was the treatment. He had listened with pleasure to what Dr. Townsend had urged in favor of a simple treatment. In a disease which in healthy children is almost never fatal, active remedies are seldom required. Even the amount of nourishment needed during the short fastigium of pneumonia is small, and children often refuse even milk until the crisis declares itself, when the appetite suddenly returns. While a student in Paris, forty years ago, he used to see large numbers of children in the "Enfants Malades," suffering with what was supposed to be lobar pneumonia, who were treated with tartar emetic. It was at that very time that Legendre and Bailly made the interesting discovery that in many of the fatal cases the solidified condition of the lung was due to atelectasis, and not to pneumonia, and could be restored to the normal condition by means of inflation. A better acquaintance with the pathology and the course of pneumonia in children has led to the abandonment of such barbarous remedies as tartar emetic, but he thought a rational treatment was far from being generally employed in this disease.

Dr. Rotch: There are a very large number of interesting points of difference between the lobar pneumonia of children and that of adults. I will not

take the time of the society in discussing them all, but refer to one or two which are of especial importance.

The age Dr. Townsend has spoken of. Some of the members of the society may remember the infant three days old presented by me at a meeting of this society about four years ago, with complete hepatization of the entire left lung.

A symptom (it might be called) of lobar pneumonia, and one of very great interest in infants and in young children, is the at times entire absence of the symptoms or physical signs which in the adult would indicate that pneumonia is present. Unconsciousness is at times an interesting feature of the disease, the infant being totally unconscious, and it being impossible to make a diagnosis by physical examination. I have seen children breathing a little rapidly and with heightened temperature, but with no other symptoms, lying perhaps a week or ten days entirely unconscious, and then having a pneumonia develop, the child becoming conscious sometimes before the crisis and sometimes after.

I should like to mention some cases of especial interest in this connection. Two little boys, one three and a half years old and one sixteen months, had tonsillitis. They lived in a country house where nothing could be found either at the time of the sickness or afterwards which would account for the disease being of infectious origin. On the 20th of November they began to vomit, and this vomiting continued for five days without any other symptoms except exhaustion; their temperature was about 100° to 101°. I saw them November 25th in consultation with Dr. Chase. At that time they were both unconscious. Their temperature had begun to go up somewhat higher, to 102° and 103°. Physical examination revealed absolutely nothing. The lungs sounded perfectly clear, and I was unable to detect anything else abnormal about them. They were simply unconscious, and there was this continual vomiting. Judging from cases with similar symptoms which I had seen before, I held the diagnosis in abeyance, but was inclined to think that the symptoms were those of acute milk poisoning; and the fact that they had been fed chiefly on milk, and that from the same cow, during these five days, made this opinion still more plausible, although the cases were both very obscure. The vomiting stopped within twelve hours after the milk was withdrawn, and they were fed on barley water, a fact which at first seemed to indicate that the milk was the cause of the symptoms, but which proved to be only a coincidence. I saw the children every day for three days, and they were simply unconscious and presented no physical signs. On the eighth day the younger child, the one that was taken sick first (the older child having been taken sick from twelve to twenty hours later), presented a small area, evidently pneumonic, at the apex of the left lung. This gradually spread; and the temperature went up from 104° to 105°, and there was rapid respiration and working of the alæ nasi. This continued for seven days, at which time the crisis came, the temperature fell. The older child did not develop any pneumonic signs until about twelve hours after the younger child; *i. e.*, he began to be sick later, and the pneumonic signs developed later, and appeared first at the left base. He also was unconscious until the crisis. Both children had complete solidification of the left lung. The temperature ran from 105° to 106°. Various measures were used to reduce the temperature. The lukewarm pack was tried and antipyrin without success, and we then used antifebrin. Antifebrin worked very well indeed in grain doses, simply placed upon the tongue. I would like to draw attention, however, to the danger which there is from antipyretics in these cases. If they are given during the course of the disease, before the crisis has come, it is apparently safe to give them. The danger is in using them at the crisis and in judging just when the crisis will take place. Both children were taking antifebrin, and both were unconscious and evidently suffering from high temperature; so that I considered that any means of reducing the temperature would be justifiable. The older child I supposed to be almost twenty-four hours behind the younger in regard to resolution. He was given a dose of antifebrin on the seventh day from the time when I detected the pneumonia. The temperature went down from 105° to 103°. The child was breathing very quietly; seemed comfortable, and was left in the room with its grandmother and nurse. I went down stairs to talk over the case with the father and mother and with the attending physician. They all of them were in high spirits, and thought that the antifebrin was keeping the temperature down, and that the children were doing well. While we were talking I had a feeling (why I don't know) that something was going wrong with the older child, so I ran up stairs to look at it, although of the two it was the one about which I had the least apprehension. The child had stopped breathing. It was in a state of collapse; no pulse could be felt at the wrist; and it apparently was dead. With the stethoscope, however, I heard a few beats of the heart. By vigorous rubbing and giving enemata of hot brandy and water the child revived, and from that moment began to get better. The crisis had come just at the time when a dose of antifebrin was given, and the two coming together carried the temperature from 105° down to 96° in perhaps an hour. It was more than the child's vitality could stand; and it would have died unless resuscitated. I then went to see the younger child, and the antifebrin was beginning to take that temperature down pretty quickly; so we placed hot-water bottles about the child and gave stimulants, thus obviating the collapse which it evidently was falling into. Resolution quickly took place after that, and both children recovered. They were unconscious for fifteen or sixteen days, and showed no signs of pneumonia until the eighth day of their sickness. The crisis in one child was in seven days, in the other in six.

The physical signs of lobar pneumonia are very elusive in children in comparison with those of adults. Last spring I had charge of a child six years old — evidently a case of lobar pneumonia. The left lung was solidified. At the time of the crisis the temperature fell, but no râles whatever were heard. The child gradually got better; and the percussion became clear very quickly, apparently fading away almost from hour to hour. No sign of resolution, in the sense of hearing râles, could be detected, and scarcely any cough.

Prolonged resolutions in cases of lobar pneumonia are extremely interesting. I remember a child of five years, where, after a lobar pneumonia in which the whole of the right lung was involved, the temperature fell, but the solidification continued for from ten to twelve days; and then the child finally got well in a very exhausted condition, having an attack of pemphigus in the latter part of the disease. I think that in delayed resolution the danger of a catarrhal condition of the lung — phthisis — resulting is not nearly so great as in the adult, and I would say that in those cases even where dulness lasts for a long time with profuse râles and sweating, children are very apt to recover, although exactly the same physical signs would point to phthisis in the adult.

Empyema in the beginning is very difficult to distinguish from lobar pneumonia. In a number of cases which I have seen in my own practice and in consultation, empyema has been mistaken for lobar pneumonia in the beginning of the attack. It is possible there may be a certain amount of pneumonia in these cases; but at the same time, from following them up carefully, I have been impressed with the belief that they were simply cases of empyema.

The next paper was the report by Dr. C. B. Porter of

A CASE OF PELVIC HÆMATOCELE: OPERATION BY LAPAROTOMY; SUTURE OF CYST TO ABDOMINAL WOUND, AND DRAINAGE; RECOVERY.[1]

In the unavoidable absence of Dr. Porter, the paper was read by the Secretary.

Dr. M. H. Richardson then reported

A CASE OF LAPAROTOMY FOR VOLVULUS.[2]

Dr. E. N. Whittier: The great importance of the subject brought to notice by Dr. Richardson is borne out if we remember the tabulation of some twelve thousand cases of death from all causes, in which the reporter, a very accurate man, came to the conclusion that at least one in 280 died from intestinal obstruction. It is considered by most authorities that the table of Leichtenstern that one to 300 to 500 die of intestinal obstruction, is more correct. From 1839 fatal cases of intestinal obstruction collected by Mr. Durham, 546 died of internal strangulation; and the figures run very curiously in this wise: that of the 546 cases that died of internal strangulation 106 had volvulus; and of the 106, 65 died of twist of the large intestine and 41 of twist of the small intestine, somewhat upsetting the previous ideas I had had of the location of twist with reference to history of intestinal obstruction.

This case was one of peculiar interest from the very outset: the latency of the symptoms, the absence of severe abdominal pain, of frequent and early vomiting, of abdominal distention, of constipation and of ineffectual straining at stool, in fact the absence of all the characteristic symptoms of internal strangulation; and what was of particular importance as conveying, perhaps, an impression likely to deceive, was the history of two large semi-liquid discharges some time after the man had been considered to have been in considerable danger from intestinal obstruction; and also the persistency of the patient, for in spite of what he spoke of in reference to a twist he insisted on going to his business and felt himself abundantly able. Certainly the first time I saw him there was nothing which would seem to warrant his being kept rigorously in bed and on liquid diet, other than the importance which should be assigned to cases of suspected intestinal obstruction. At that time a mass, not tender, easily moulded, doughy to the feel, irregular in outline, and somewhat irregular in surface, was in the left inguinal and left lumbar region, about midway between the anterior superior spine and the umbilicus and the margin of the ribs; affording evidence of an intestinal tumor and very slight additional evidence of anything more than a circumscribed peritonitis associated.

Apprehension at that time was well founded that a purulent cellulitis had taken place in the left lumbar region, and that if anything was done it would be to evacuate pus, which seemed to be making its way to the surface. The man was kept in bed and watched carefully. External applications were made, when suddenly in Dr. Marion's absence a collapse took place; and immediately after that it was decided, owing to increase in the gravity of the symptoms, that laparotomy should be done. If I understand the location of this volvulus, it was in the upper part of the duodenum? (turning to Dr. Richardson).

Dr. Richardson: I think at the beginning of the jejunum.

Dr. Whittier: At all events the tumor was unexpectedly low for a volvulus, and in the left inguinal and lumbar region.

As a last resort (and it had not seemed to me at any previous time indicated) laparotomy was done to give the man the chance he was entitled to. I do not think operation two days previous would have saved him, for the autopsy showed a complication probably of a thrombosis of the superior mesenteric artery. There is nothing in the history of the case, other than the collapse, to establish time at which this was formed.

Dr. H. E. Marion: In this case vomiting took place on the night referred to, on the evening of the fourth, laparotomy on the fifth. If I remember rightly, the ecchymosed part of the small intestine removed extended from the upper part of the jejunum to nearly the whole of the ileum, including almost all the small intestine, and, if I remember correctly, Dr. Whitney, on making an examination of the liver afterwards, found micrococci in it. It is an interesting pathological fact.

Dr. Whittier: Was there in the vomitus an appearance of blood slowly transuded into the stomach, and had it undergone some putrefactive change?

Dr. Marion: I examined by microscope that morning. There were degenerated blood cells.

Dr. F. B. Harrington then reported

A CASE OF REMOVAL OF A LARGE PART OF THE FRONTAL BONE FOR COMPOUND FRACTURE: RECOVERY.[3]

The President nominated Dr. E. O. Otis delegate to the annual meeting of the Connecticut State Medical Society.

[1] See page 624 of the Journal.
[2] See page 629 of the Journal.
[3] See page 630 of the Journal.

The President also nominated the following secretaries of sections: Anatomy and Physiology, Dr. M. H. Richardson; Medical Pathology, Clinical Medicine and Hygiene, Dr. A. N. Blodgett; Obstetrics and Diseases of Women, Dr. G. Haven; Chemistry, Pharmacy, and Materia Medica, Dr. F. H. Williams; Surgery and Dentistry, Dr. G. H. Monks; Ophthalmology, Dr. M. Standish; Psychology, Dr. G. F. Jelly; Microscopy, Dr. W. J. Otis.

EXHIBITIONS OF PATHOLOGICAL SPECIMENS.

DR. F. C. SHATTUCK showed some serum obtained by blistering a patient with hæmoglobinuria in his service at the Massachusetts Hospital, and also, for the sake of contrast, serum from a patient with chronic nephritis. The former was markedly red in color. It was drawn several days before, at a time when the urine was loaded with hæmoglobin, which soon after disappeared. The patient is a negro, has a malarial history, and is now in the second week of typhoid fever.

It cannot be positively determined at present what the relations of the hæmoglobinuric attack are, though the facts that it has been of short duration and that Ehrlich's experiment was successfully repeated in the case would suggest that it may belong in the paroxysmal class. This experiment consists in placing a tight ligature about a finger, then immersing the finger for twenty minutes in ice water, and, finally, for about ten minutes in tepid water. A drop of blood is then taken from the finger and put under the microscope, which shows that some of the red corpuscles have lost their coloring matter.

There was a malarial history. This fact, and the blood corpuscles so affected by the influence of cold, would indicate that the case is one of the paroxysmal form, and that the hæmoglobinuria is passing off.

The President, DR. JOHN HOMANS, showed a uterine fibroid, weighing seven pounds, removed by him from a patient thirty-one years old by laparotomy. About two inches of the uterine canal was included in the tumor removed. The stump of the pedicle was treated extraperitoneally. The tumor was first noticed in April; and at the time of operation it extended above the umbilicus. It was nearly globular in shape. Both ovaries and tubes were removed with the tumor.

DR. HARRINGTON: What was used for clamp?

DR. HOMANS: The wire écraseur modified by Dr. Mixter. One of the modifications consisted in two little wheels being inserted at the shoulder of the clamp where the wire comes over; so that the wire is not so liable to break. If you look at the cut surface of that specimen you see how large the area was where the wire was put round, and yet that the portion of the neck of the stump was not larger than my little finger.

The society then proceeded to choose by ballot a committee of five to prepare a list of candidates for officers of the society.

The choice was announced by the President as follows: Dr. F. W. Draper; Dr. F. Minot; Dr. F. J. Knight; Dr. T. M. Rotch; Dr. M. Prince.

The society then adjourned.

NEW YORK COUNTY MEDICAL ASSOCIATION.

STATED meeting, November 19, 1888.

DR. J. G. TRUAX read a paper on

PELVIC ABSCESS WITH LESIONS AS THE RESULT OF LACERATIONS OF THE CERVIX UTERI;

after which Dr. H. S. OPPENHEIMER read a paper on

HEADACHES AND OTHER NERVOUS SYMPTOMS CAUSED BY FUNCTIONAL ANOMALIES OF THE EYE.

It was the object of the paper, he said, to call more particular attention to the functional errors only; as the effect upon health, and even upon the formation of character, of errors of refraction, such as myopia and hyperopia, had now been extensively discussed, and the necessity for their correction generally recognized. Having stated that, of all the symptoms which brought patients to seek the aid of a physician, headache was probably the one most frequently complained of, he said that there was one cause of this which was frequently overlooked by the busy practitioner, viz., eye-strain. If sufficient attention was paid to this condition many a patient might be spared the fruitless use of a long list of remedies in the attempt to secure relief for a persistent or recurring headache. A number of the best neurologists and general practitioners had gradually during the last few years come to the recognition of the fact that a considerable proportion of their cases of headache, neurasthenia, vertigo, and even insomnia, inability to concentrate thought, etc., depend on the presence of mere functional disturbances about the eyes, and are relieved by their proper treatment in competent hands. More attention had therefore been paid to the careful examination of the functions of accommodation and fixation, and the close relationship existing between the focusing and the directing apparatus of the eye, than ever before; and it had been a cause of surprise to oculists even to discover how many of the merely functional disturbances of the nervous system, seemingly unconnected with the functions of the eyes, could be relieved by a careful and painstaking study and treatment of the muscular apparatus of these organs.

He said that in the present paper he had concluded to leave out the citation of cases, and content himself with giving in a general way the different symptoms, variously modified in individuals, which he had noticed as existing in connection with muscular asthenopia, and which subsequently disappeared, completely or partially, under treatment directed towards restoration of the muscular balance. In referring to some points in the anatomy and physiology of the ocular muscles, he said that it was to be borne in mind that in all its actions each muscle was steadied and balanced by more or less action of the opposing muscle, and that all the muscles of the eyeball, through their tone, contributed to the steadiness of its motion and the maintenance of its positions. What he desired to emphasize was the fact that the eyes, in working together, call for a variety of combined action on the part of the muscles. It was to be remembered that each eye has to be directed to a nicety, so that the image shall fall upon the most sensitive part of the retina,

the yellow spot, in order that both eyes may see the same object, and thus single vision with both eyes shall result. This was what was termed binocular vision. It was also to be remembered that the twelve muscles of the two eyes are supplied by six different nerves, and that the failure or weakening of any one of their muscles will disturb the harmonious working of both eyes. Considered in this way the marvel was, not that we have muscular insufficiencies and losses of balance, but that we ever have binocular vision at all. It took infants some months to gain control of the ocular muscles so as to obtain and hold a single vision with both eyes, and a considerable proportion of individuals never had it. Those who squinted never had it while they squinted.

In regard to insufficiency he said that a muscle was clearly insufficient which could not hold the eye in its proper place against its antagonist and allowed this antagonist to draw the eye to its own side, thus causing a squint; but technically a muscle was said to be insufficient which could do its work, but did it under such a strain as to cause unpleasant symptoms and sensations. It was a muscle which habitually maintained binocular vision by the expenditure of a greater amount of effort than was demanded in the perfect condition of equilibrium. In strabismus, however, there was habitual diplopia, conscious or unconscious, and therefore the constant striving to prevent deviation of the visual lines was not present. It was for this reason very rare to find in cases of strabismus the long list of symptoms with which oculists were so familiar in patients suffering from insufficiency. In the normal eye in a healthy subject the muscles were so perfectly balanced that they maintained their equilibrium at all ordinary distances, even when the effect of the will was wholly in abeyance.

Having described the method of testing for muscular insufficiency, and its variety and degree when present, with prisms, he said that it was hardly necessary to remark that the condition of the muscles varied in the same individual at different times and in differing conditions of health. Thus, in some nervous women he found that during the period of menstruation they would sometimes complain of pain or discomfort from the eyes, which might be relieved by the temporary wearing of glasses. There was, so far as his experience went, no observable relation between the severity of the symptoms present and the degree of insufficiency. Some people went comfortably about their business with a manifest degree of insufficiency which would drive those of a more nervous organization to distraction; and the nervous irritability of the individual seemed to determine in a great measure the appearance of many of the symptoms. Persons who used their eyes constantly in the examination of minute objects were very apt to feel slight tendencies to loss of muscular balance of the eye.

In most of the cases which had come under his observation there was some trouble of refraction complicating the muscular difficulty, and in quite a number of them, as he believed, causing it. Headache was perhaps the most constant symptom of all the cases. These headaches were not at all confined to the fontal or temporal regions, as one would expect. They might be general or they might be referred to the vertex or occiput. One of his patients complained of pain in the back of his neck, which he said left him after he had begun to wear the proper glasses. Again, the headaches might be constant, or they might come on with the use of the eyes, or perhaps only after the eyes had been used for some hours. Some of the patients woke up with them. The headaches sometimes took on a neuralgic form, and in certain instances were exceedingly severe. Another quite frequent symptom was the inability, or the loss of disposition, to use the mind. Patients would say that they did not want to think, and when they were obliged to do it it seemed to distress or fatigue them. It was this class of patients also, strange as it might seem, that were apt to complain of insomnia. Dizziness, or some form of vertigo, was not a rare symptom, and it was sure to be complained of where the muscles were barely able to maintain an equilibrium. The least lapse would bring on diplopia, and this was apt to produce vertigo. One woman of fifty-three, who suffered from headaches, dizziness, and severe tinnitus aurium, for which she had taken large doses of the bromides, was promptly relieved of all these symptoms by the wearing of appropriate glasses.

People who found a great portion of their pleasure in reading were most apt to be depressed on discovering that they were no longer able to use their eyes *ad libitum*, and this depression was likely to produce in persons of a nervous temperament all sorts of neurasthenic symptoms. It was this particular class of patients who were changed so radically when they found that they could use their eyes with comfort again.

The treatment of these cases of insufficiency, Dr. Oppenheimer said, should always be preceded by a most careful study of each individual, by a rest of the eyes, where possible, with the use of atropine, and by a most painstaking correction of the anomalous refraction. The functions of accommodation and convergence were so closely interdependent that he found it difficult to give a satisfactory muscle test without knowing first what the state of muscular balance was, without having the accommodation completely at rest. This would frequently bring out a latent insufficiency which before had been masked. When there was a refractive error, the correction of this alone sometimes sufficed. In fact, where there were high degrees of astigmatism, he had frequently found that the correcting glasses for the refraction enabled the patient to use the eyes with comfort. In cases where a prism was incorporated with the correction for refraction, there was often some difficulty in the patient's becoming accustomed to its use; and he therefore usually began by correcting the insufficiency about one-half, or even less. Then, by increasing the prism as required he gradually accustomed the patient to accept aid in this way. When the patient was able to use the eyes with comfort he rested satisfied, and made no attempt to attain the ideal balance of the muscles.

When it was necessary to use prisms of such high degree as to give the patient the uncomfortable sense of everything being convex or concave, he advised tenotomy, and in performing this he followed the method of Snellen; beginning the divi-

sion at the middle of the tendon, and gradually cutting outward as far as might be required. In the slighter grades of insufficiency he greatly preferred the use of prisms to tenotomy, for the following reasons: —

First. It is the easiest to the patient.

Second. It is usually sufficient to restore the patient to the comfortable use of his eyes.

Third. Restoration to perfect health and condition quite often restores the equilibrium of the muscles, and a tenotomy may under those circumstances incline the balance in the opposite direction. He said he could not too strongly express his conviction that out-of-door exercise and all other hygienic and medical means to restore the general health are most important adjuvants to the special treatment.

So far from setting up an absolute standard for the strength of each set of muscles, and dividing tendons until this standard was reached, he believed it was as irrational to set up a standard of muscle power, and call deviations from this abnormal, as to set up a standard of weight for an adult man, and call every one not coming up to this weight atrophic. He then quoted a paragraph from a recent article in the *Archives of Ophthalmology*, by Dr. George Stevens, the champion of tenotomy, which he stated was, in language familiar to the non-specialist, equivalent to saying: If there is a lateral balance and a vertical balance of the muscles to your test, but the outer muscles do not appear quite as strong as they should be according to an arbitrary standard, and if you do not increase the strength of these supposedly weak muscles by practice of a few minutes at a time for several days, and do not succeed in weakening them either by resting them in letting prisms do their work for them, then an operation is undoubtedly permissible. If we remembered that this operation would be a tenotomy of the internus muscle, the muscle which of all others needed to be strong in order to converge properly, and that there was more or less convergence required for all distances within twenty feet (which meant, in a city, almost all the time), we got an idea to what a dangerous extent a hobby could be ridden. In such a case Dr. Oppenheimer would say: If a weak prism, worn for a few days, gives relief, let the patient continue to wear it, and when it ceases to answer increase its strength as required. He did not wish to have it inferred, however, that he did not tenotomize the internus for a pronounced insufficiency of the externus. He had certainly had some excellent results from doing this where he thought it indicated; but he did not operate for ailments imagined by the patient or the physician, nor did he claim to make effectual cures of epilepsy or chorea by tenotomy.

He then summed up the treatment of cases of eye-strain as pursued by him for headaches and other nervous symptoms as follows:—

First. All hygienic and medical indications to be carefully carried out by the attending physician.

Second. A most careful correction of the refraction and accommodation.

Third. Correction of muscular insufficiencies by prisms, begun with a less degree of strength than apparently necessary, and increased if this should prove insufficient.

Fourth. Tenotomy, if prisms do not relieve, or if they cause too much discomfort of themselves.

And, finally, when the patient can use his eyes with comfort, with the correction given him, I rest satisfied, and cannot think any operation justifiable under these conditions.

Recent Literature.

Essentials of Chemistry and Toxicology, for the use of Students in Medicine. By R. A. WITTHAUS, A. M., M. D. Second edition. New York: William Wood & Co. 1888.

This volume, which forms one of Wood's series of pocket manuals, contains 1053 questions, with answers based upon the author's excellent Manual of Chemistry. It is essentially, therefore, an abstract of the latter work. The author distinctly disclaims any intention of preparing a "cram compend," and has endeavored to make the book useless for this purpose. This book is one of the best of the numerous small volumes which have been from time to time published under the titles of "Essentials of Chemistry," "Aids to Chemistry," "Lecture Notes on Chemistry," etc.; and, used as the author recommends, in connection with his larger work, or with a course of lectures in chemistry, as an aid in preparing recitations, it will doubtless prove useful to the average student.

Ptomaines and Leucomaines, or the Putrefactive and Physiological Alkaloids. By VICTOR C. VAUGHAN, Ph. D., M. D., and FREDERICK G. NOVY, M. S. Philadelphia: Lea Brothers & Co. 1888.

On the Animal Alkaloids, the Ptomaines, Leucomaines, and Extractives in their Pathological Relations. By Sir WILLIAM AITKEN, Knt., M.D, F.R. S. Philadelphia: P. Blakiston, Son & Co. 1887.

The work of Prof. Vaughan and Mr. Novy represents the first attempt in this country to collect into one volume everything of importance pertaining to this subject. The character of the work is best shown by the following table of contents: Chap. i.: Definition and Historical Sketch of Ptomaines. Chap. ii.: Foods containing Poisonous Ptomaines. Chap. iii.: The relation of Ptomaines to Disease. Chap. iv.: The importance of Ptomaines to the Toxicologist. Chap. v.: Methods of extracting Ptomaines. Chap. vi.: Chemistry of the Ptomaines. Chap. vii.: Chemistry of the Leucomaines. Chap. viii.: The pathological importance of the Leucomaines. Chap. ix.: Literature. The bibliography in the last chapter is very complete, containing a reference to the original report of nearly everything of importance published up to the present year. The book is in all respects an excellent one, and should be in the hands of every physician and chemist.

The subject matter of Prof. Aitken's book originally formed a lecture introductory to the course of instruction at the Army Medical School at Netley. It is a small volume of fifty-six pages, and claims to be nothing more than a brief summary of the views now entertained regarding the origin of certain diseases through physiological processes going on within the body during life. The opening pages contain a short historical sketch of the ptomaines and leucomaines; then follows a brief discussion of their clinical and pathological aspects.

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ANNUS MEDICUS, MDCCCLXXXVIII.

THE thoughtful physician, of which species the JOURNAL is happy to number an unusually large representation on its subscription list, is wont to turn from the festivities of the holiday season, even from the necessarily somewhat engrossing work of closing up his books and sending out his modest reminders of indebtedness for professional service, to the editorial columns of the JOURNAL in its final issue for each year, to see what have been some of the more prominent events of the year that is closing. For such a reader we have to present the following partial review.

The epidemic diseases of the year 1888 have fortunately been few. Cholera has, except for some regions of South America, been practically confined to its Oriental habitat, and the unfortunate experiences of Southern Europe the previous year have not been repeated. Small-pox has also remained in abeyance so far as concerns English-speaking people. Yellow fever, on the other hand, has shown considerable activity in the southern parts of this country,— Jacksonville, Florida, being the heaviest sufferer. Sporadic cases occurred in southern Florida through last winter, the poison being introduced from Havana, where yellow fever is endemic, and the condition of which as a home of yellow fever offers a constant menace to our southern seaboard. A wide-spread but moderate epidemic of the disease prevailed in 1887 which resulted in 1270 deaths, mostly in Mexico, Brazil, Central America, and the West Indies, though 147 of them occurred in Florida. Early in last August the fever showed itself with uncomfortable frequency in northern Florida, and an epidemic of considerable proportions followed. Up to December 13, when the issuing of fever bulletins was discontinued, there had been in Jacksonville about 4704 cases, with 412 deaths. The type of the disease was light, the mortality diminishing with the autumn months, though new cases continued to appear after the first frost, which was November 13. The low mortality rate, about 8¾ per cent. compares very favorably with that of the epidemic of 1878, which in Louisiana, among 30,000 cases, was 16⅔ per cent. McClenny, Gainesville, Palmetto, Fernandina, and other Florida towns were visited by the disease, as were also Decatur, Alabama, and Jackson, Mississippi, but no considerable foothold was gained by the fever outside of Florida. A most annoying quarantine, however, was maintained for some weeks by nearly all municipalities in the Mississippi valley, as far north as Chattanooga.

Considerable attention has been directed, especially among the medico-legal fraternity, to the subject of the manner of executing the death penalty. A commission appointed the previous year by the governor of New York reported about the 1st of last January in favor of the use of electricity, and suggested several desirable modifications in the further conduct of executions, such as the limitation of publicity both in the admission of spectators and the printing of descriptions in the public press. The recommendations of this committee were sanctioned by the New York Medico-legal Society, but were disapproved by the Society of Medical Jurisprudence and State Medicine. The legislature, following the recommendations of the commission, passed a law, which goes into effect January 1 next, requiring the execution of criminals by electricity. As to the preferable method of applying this agency, experiments have been made by electrical engineers in presence of the author of the new law, a committee of the Medico-legal Society, and others interested, which go to favor the employment of alternating currents from a dynamo generating an electromotive force of at least 3000 volts.

A nine days' wonder, or rather a thirty days' wonder, of the year, was the fast of an Italian named Succi, who unlike others of his ilk, performed his fast under the constant supervision of scientific men. These were of the Medico-physical Academy of Florence, which body appointed ten or eleven committees, each to be in charge of some special department of physiological observation. The observations have been worked out with detail, and may be of some permanent value to science. Succi took, by previous agreement: 1, an occasional saline purgative; 2, an alkaline beverage; 3, water for washing out the stomach and other purposes; 4, olive oil, in inconsiderable quantity, for embroca-

tion. He performed his task successfully, and has since undertaken to duplicate it in Barcelona.

Certain occurrences of the year have brought into strong prominence the "wrong side" of our modern civilization, especially in the great cities. The "sweating" investigations made in England both by Parliamentary order and by the press have revealed a great deal of misery among a class of really skilled operatives, oppressed by employers who have put out tailoring work to be done in the homes of workmen at prices utterly inadequate to the support of the workers, who labor under conditions of privation and filth, whose possible ill effects may even reach the more favored persons who are destined to wear the garments so made.

Another comment on the occasional failures of civilization is in the series of mysterious murders committed in Whitechapel, London, by some person, evidently the victim of insanity of a perverted sexual type. The sanitary condition of the rookeries, inhabited by the victims and presumably their destroyer, has forced upon humanitarians the question whether society is not in a measure responsible for the physical conditions which lead to crime and disease, and so for these curses themselves.

A cancer bacillus was recognized toward the beginning of the year, at first by Scheuerlen, and later by Francke and others. Francke also discovered a sarcoma bacillus, larger and thinner than that of cancer, and otherwise slightly differing from it. The genuineness of these bacilli has however been questioned, and as is apt to be the case, some acrimony developed in the course of the discussion.

The year has also witnessed the complete "decline and fall" of the microbe of yellow fever described by Dr. Domingo Freire, of Rio Janeiro, and Dr. Carmona, of Mexico, together with the failure of the method of preventive inoculation suggested by them. Dr. Gibier, who was sent out from France to investigate the subject, joins with Dr. Sternberg, the commissioner appointed by our President to study the claims of Freire and Carmona, in denying the validity of the supposed discovery.

One or two unfortunate medical controversies, carried on largely through the columns of the daily press, have marred the year. Our English and German brothers have suffered perhaps most severely from them, but their unfortunate effects have been felt among the medical profession the world over. First in order of time was the controversy carried on in the columns of the *London Times* on Homœopathy, started by the bitter onslaught of Lord Grimthorpe upon regular medicine. Sensitive and zealous members of the profession rushed to its defence, and the result was a newspaper war which, as always, left things exactly where they were, but with the disadvantage of an extensive advertising to the public of what they had previously known and cared little about. The lesson is one which medical men have been slow to learn, but which it is to be hoped they will now profit by.

Another most unfortunate controversy has arisen over the grave of one of the most heroic and patient of sufferers, the Emperor Frederic III., who died of cancer June 15. The German surgeons early diagnosticated the disease, and advised extirpation of the larynx. Sir Morell Mackenzie discredited their diagnosis and opposed the operation. English men and methods are none too popular in German court circles, and when the disease showed itself to be actually cancer, there was little disposition to praise the course of the English surgeon. His action, whether prompted by a desire to keep up his patient's courage, or by the more diplomatic motive of doing nothing which should stand in the way of his patient's accession to the throne, even for ever so brief a time, and the consequently enhanced pension and emoluments of Queen Victoria's daughter, as the widow of a crowned emperor, was condemned. He was accused of letting the patient die by neglect, even of having removed healthy laryngeal tissue by mistake, and of other malpraxis. Mackenzie retaliated by accusing one of his opponents of bungling in performing tracheotomy, and threatens to sue any publisher who shall offer for sale the German surgeons' report. The sentiment of our English brethren seems to be somewhat adverse to their countryman's course, and the last move of the latter has been to resign his membership in the College of Physicians. The whole discussion "though it make the unskilful laugh, cannot but make the judicious grieve."

Meantime two illustrious men of the Western world have in the time of their mortal extremity required and received the best service of our profession, together with the warm sympathy of the public at large. The one, General Philip H. Sheridan, going down as a brave soldier to his death, and the other, Dom Pedro of Brazil, coming up from death's door to restored health, and to strength equal, it is hoped, to added years of enlightened rule.

The event of chief interest to the American medical profession during the year was undoubtedly the first triennial meeting of the Congress of American Physicians and Surgeons, which took place in Washington, September 18–20, and was presided over by Dr. J. S. Billings. Meetings of the Congress were held each evening, and the participating societies held each its separate session

daily. These societies were the Association of American Physicians, and the American Surgical, Climatological, Laryngological, Dermatological, Genito-Urinary, Neurological, Orthopædic, Otological (special meeting), Physiological, Ophthalmological (special meeting), Gynecological Societies, the American Association of Obstetricians and Gynecologists, and the Association of American Anatomists.

Besides this great assembly, the other more noteworthy medical gatherings of the year, outside of the State society meetings, have been as follows: —

The 17th Congress of the German Surgical Society convened at Berlin, April 4–7, 1888.

The 7th German Congress for Internal Medicine was held at Wiesbaden, April 9–12.

The American Medical Association held its 39th annual meeting at Cincinnati, Ohio, May 8–11.

The American Otological Society held its 21st annual meeting at New London, Connecticut, July 17.

The American Ophthalmological Society held its 24th annual meeting at New London, Connecticut July 18–19.

The Congress for the Study of Tuberculosis was held in Paris, July 25–31.

The British Medical Association held its 5th annual meeting in Glasgow, August 7–11.

The 7th International Congress of Ophthalmology was held in Heidelberg, August 8–11.

The Canadian Medical Association held its 21st annual meeting in Ottawa, September 12–13.

The 61st annual meeting of the Association of German Naturalists and Physicians occurred at Cologne, September 17–22.

The American Academy of Medicine held its 12th annual meeting in New York, November 13–14.

The American Public Health Association held, its 16th annual session in Milwaukee, Wisconsin, November 20–23.

Of the established Lecture Foundations, which during the year have called forth the matured teaching of eminent medical authorities, we mention, first, in England, —

The Lettsomian Lectures on Some Points in the Surgery of the Urinary Organs, by Reginald Harrison, F. R. C. S.

The Hunterian Lectures on the Tongue as an Indicator of Disease, by W. Howship Dickinson, M. D., F. R. C. P.

The Gulstonian Lectures on Insanity in relation to Cardiac and Aortic Diseases and Phthisis, by William Julius Mickle, M. D., M. R. C. P. L.

The Cavendish Lectures on the Altered Relations of Surgery to Medicine, by Sir W. Stokes, M. D.

The Croonian Lectures on the Antipyretics, by Donald McAlister, M. A., M. D., F. R. C. P.

The Bradshawe Lecture on Uræmia, by William Carter, M. D., B. Sc., &c.

The Bowman Lecture on the Value of Eye Symptoms in the Localization of Cerebral Disease, by H. R. Swanzy, A. M., M. B., F. R. C. S. I.

In this country we have had—

The Middleton Goldsmith Lecture, which was given by Prof. J. M. DaCosta, of Philadelphia, before the New York Academy of Medicine, April 18, and was upon the Relation of the Kidney and Heart Affections.

Also the Cartwright Lectures on the General Pathology of Fever, which were given in March and April, by Prof. William H. Welch of Johns Hopkins University, and were published in full in this *Journal*.

As always, a sadly prominent part of review of the medical year is the list of eminent men of the profession who have been removed by death. Of these names we mention a few.

Arthur Farre, M. D., F. R. C. P., F. R. S., a distinguished physician and obstetrician, died in London, December 17 of last year, aged seventy-seven. He was professor of obstetric medicine in King's College Hospital from 1841 to 1862. He was made F. R. S. at the early age of twenty-eight. In 1851 and 1852 he was president of the Royal Microscopical Society. He was physician-accoucheur to the Princess of Wales and to several of Queen Victoria's daughters; was made physician extraordinary to the Queen in 1875, and in virtue of his seniority and prominence became honorary president of the Obstetrical Society, which position he held at his death.

Alexander Dickson, M. D., LL. D., F. R. S. E., professor of Botany in the Dublin University, and later at Edinburgh, physician and botanist, died December 30, 1887, at the age of fifty-two.

James R. Nichols, M. D., of Haverhill, Massachusetts, died January 2, aged sixty-nine years. He was the founder and editor of the *Journal of Chemistry*, now the *Popular Science News*, and the writer of some thoughtful essays on the great problems of life and death.

Prof. Tito Vanzetti, of the chair of Clinical Surgery in the University of Padua, died January 6, at the age of eighty. He had been a renowned operator, and amassed a fortune, of which he left $20,000 for the advancement of clinical surgery in his own school.

Wesley M. Carpenter, M. D., of New York, died January 7, aged forty-nine years. He was particularly devoted to medical literature, was a member of the staff of the *Medical Record*, author of the "Index of Medicine," editor of the "Epitome of American Medicine and Surgery," and a prolific and

trustworthy writer in various medical encyclopædic works.

George A. Crosby, M. D., of Manchester, a distinguished member of a family renowned in the medical history of New Hampshire, died in Manchester, January 29, aged fifty-seven. He had been president of the New Hampshire Medical Society.

Ernest Leberecht Wagner, M. D., for twenty-five years professor of General Pathology and Pathological Anatomy in the University of Leipsic, died February 10, at the age of fifty-nine. His most noted work, "Handbuch der allgemeiner Pathologie," appeared in 1862, and passed through many editions, of which no less than six had been translated into English up to 1876. He contributed the article on Bright's disease to "Ziemssen's Cyclopædia."

Dr. Emil Bessels, physician, naturalist, Arctic explorer, and scientific director, first on the steamship Alert, 1869, and later with the Polaris, 1871, secretary of the Smithsonian Institution, died March 30, aged forty.

F. S. François de Chaumont, professor of Hygiene, at first conjointly with the late Dr. E. A. Parkes, at the Army Medical School at Netley, England, and a recognized authority in sanitary science, died in April, aged fifty-five.

Dr. Robert Hippolite Brochin, editor-in-chief of the *Gazette des Hôpiteaux*, died March 25, aged seventy-nine.

Cornelius Rea Agnew, M. D., the distinguished oculist of New York, died April 18, aged fifty-eight. He had been surgeon-general of the State of New York, an active organizer and worker in the Sanitary Commission of the war; a founder of the Union League Club of New York and also of the Brooklyn and the Manhattan Eye and Ear Hospitals, clinical professor of Diseases of the Eye and Ear in the College of Physicians and Surgeons, president of the Medical Society of the State of New York, and a member of a great number of important scientific societies.

Edward Greeley Loring, M. D., also a successful ophthalmologist of New York, died April 23, aged fifty-one. He was a native of Boston, where he received his medical education, but spent his professional career mostly in New York, where he was associated in partnership with Dr. C. R. Agnew, for whose professional chair he was suggested as a successor in the few days which elapsed between the death of the two men.

Edward S. Dunster, M. D., professor of obstetrics at the University of Michigan, formerly a teacher in the University of Vermont, Dartmouth Medical College, and the Long Island Medical College, and for a time editor of the *New York Medical Journal*, died May 3rd.

Thomas Harrington Tuke, M. D., widely known as a practical psychologist, for eight years president of the Medico-psychological Association, and an abundant writer on subjects connected with insanity, died June 9, aged sixty-two.

John Milner Fothergill, M. D. Ed., M. R. C. P. L., died June 28, at the early age of forty-seven. While never holding any professorial chair, he exercised a wide influence on the profession through his writings, which were numerous, among the best known being "The Heart and its Diseases," and the "Practitioner's Hand-book of Treatment."

A. Y. P. Garnett, M. D., of Washington, ex-surgeon general of the Confederate army, died July 11, aged sixty-eight. Besides his official relations with the Confederacy he was the personal physician and intimate friend of Jefferson Davis and many other leaders of the cause. After the war he returned to practice in Washington, where he was made professor in the Medical College. He was president of the American Medical Association in 1887.

Dr. Salvatore Tommasi, a leading representative of Italian medicine, died at Naples, July 13, aged seventy-four. He was already professor of the Practice of Physic in the University of Naples in 1849, when he was obliged to flee the country for his political views, but he later resumed a chair in the university, where he was made clinical physician-in-chief.

O. W. Wight, M.D., formerly health officer of Detroit, died in November, aged sixty-five. He was a pioneer in public sanitation, on which subject he had written, and as an executive officer acted with marked ability.

Prof. Heinrich von Bamberger, of Vienna, died November 9, aged sixty-six. He had been ordinary professor of internal medicine at Würzburg for eighteen years, when in 1872 he was called to Vienna to fill the chair on the same subject, succeeding Oppolzer. In 1885 he was elected Rector magnificus of the university. As a teacher he was very popular, and was the author of several useful monographs.

Henry B. Sands, M. D., an eminent practising and consulting surgeon of New York, and professor in the College of Physicians and Surgeons, whose distinguished services to practice of surgery are fresh in our readers' minds, died November 18, at the early age of fifty-eight.

Died in New Bedford, Mass., December 24, 1888, Charles Lamson Swasey, M. D., M. M. S. S.

NECROLOGY OF THE MASSACHUSETTS MEDICAL SOCIETY, 1888.

James Robinson Nichols, M. D., of Haverhill, died January 2, aged 68.

Luther William Bennett, M. D., of Boston, died January 4, aged 37.

Peter Parker, M. D. (hon. mem.), of Washington, D. C., died January 10, aged 83.

George Atwood, M. D. of Fairhaven, died January 16, aged 72.

Joel Spalding, M. D., of Lowell, died January 30, aged 68.

Charles Warren, M. D., of Wellesley Hills, died January 31, aged 73.

George Stevens Jones, M. D., of Boston, died February 2, aged 70.

Rowse Reynolds Clarke, M. D., of Whitinsville, died February 4, aged 65.

Nathaniel Gilman Trow, M. D., of Sunderland, died February 4, aged 76.

Charles Berwick Wellington, M. D., of Cambridgeport, died February 17, aged 28.

Francis Henry Mullen, M. D., of Dorchester, died March 15, aged 31.

George Arthur Priest, M. D., of Manchester, died April 25, aged 59.

Enoch Cross, M. D., of Newburyport, died May 17, aged 86.

Norman Smith, M. D., of Groton, died May 24, aged 76.

Alonzo White Bennett, M. D., of Uxbridge, died July 19, aged 67.

George D. Townshend, M. D., of Roxbury, died August 20, aged 46.

Henry O. Stone, M. D., of Salem, died August 23, aged 67.

John Cochrane, M. D., of Lowell, died September 9, aged 40.

Yorick Gordon Hurd, M. D., of Ipswich, died September 24, aged 60.

Samuel Kneeland, M. D., of Boston, died September 27, aged 67.

William Jerome Klinghammer, M. D., of Roxbury, died October 1, aged 31.

Joseph Sargent, M. D., of Worcester, died October 13, aged 73.

Lorenzo Wadsworth Tuck, M. D., of Boston, died October 19, aged 28.

Francis Dana Bartlett, M. D., of South Dartmouth, died November 11, aged 85.

Charles Bailey Shute, M. D., of Malden, died November 25, aged 45.

Henry Holton Fuller, M. D., of Charlestown, died December 13, aged 52.

Ira Russell, M. D., of Winchendon, died December 19, aged 74.

Edwin M. Snow, M.D., city registrar of Providence, R. I., died December 22nd, aged sixty-eight years. He was made city registrar and superintendent of health for Providence in 1855 at the time of the creation of those offices, and filled those positions with marked ability from that date to the present time. He took a number of censuses of the city and State, and was supervisor for the district of Rhode Island of the national census of 1880. He served the correctional institutions of the State in many ways, and was chairman of the commission which built the new State prison at Cranston. He was one of the founders of the American Public Health Association in 1872, was vice-president 1872–74, and president 1875–76.

MEDICAL NOTES.

— The Philadelphia Polyclinic has established a three months' special course in ophthalmology. It will include systematic didactic instruction and quizzing, with three hours' clinical work daily.

— Growing out of the controversy between electrical engineers regarding the comparative lethal effects of the alternating and continuous currents of high intensity, as proposed for the execution of criminals in New York, the following singular challenge has been sent for what may be called an electrical duel: —

"In conclusion I desire to offer Mr. Westinghouse the following challenge. He asserts that the alternating current is less dangerous than the continuous current, but he has not proved it. I have asserted that the alternating current is five times as dangerous as the continuous, and I have proved it to be so in many cases. I therefore challenge Mr. Westinghouse to meet me in the presence of a committee of electrical experts, and take through his body, from hand to hand, the alternating current, with the same number of alternations per second as used by the Westinghouse company, while I take through mine a continuous current. We will then commence with 50 volts, Mr. Westinghouse, of course, leading, and will gradually increase the pressure, until either one or the other has cried 'enough,' and admitted his error, each contact to be for a period of five seconds. I warn him, however, that the alternating current at 160 volts for five seconds has proved fatal in my experiments, and that several men have been killed by the low-tension Jablohckoff alternating currents. Harold P. Brown."

— New York has a benefactor who has discovered, and sells at the modest price of three dollars a gallon, a "microbe killer," composed of an "electrical extract of steam and air." His circular announces: "The microbe is the only cause of fermentation; we must learn to stop fermentation by killing the microbe. Fermentation causes sickness and death. The microbe cannot be killed by medicine. More people get killed every year by drugs than by microbes. Doctors vary in their methods of getting microbes out of you; some do it by pulling them

out through the skin with plasters, and others with a liniment. Others, again, try to shake them out with electricity, but medical science is baffled in not knowing how to kill the microbe without killing the patient; Radam knows how to do it, excepting in cases of low consumption — it is too late. The microbe killer will even kill the microbes on your teeth. Fits are cured in six months with the microbe killer — because fits are caused by people being so full of blood — so that when the spell comes on the blood runs to the head and brain. Insane persons can all be cured with the microbe killer, because it makes their blood as clear as scarlet. An attempt was made last summer to try the microbe killer on cholera and yellow fever, but the jealous doctors would not allow it. Take any disease. For instance, you eat too much; fermentation goes on in your bowels; now drink microbe killer, and fermentation is gone, or the microbes are killed. I have found the genuine life preserver, and have made a vital revolution with the microbe killer. *Similia similibus curantur.* Close all medical colleges, kill all the doctors, and burn every medical book. I am the great Doctor Eisenbarth, who cures every one by his own art. My name is Radam."

NEW YORK.

— The beautiful new Montefiore Home for chronic invalids, situated on the Grand Boulevard, at 138th Street, was dedicated with appropriate ceremonies December 18th.

— Small-pox has reappeared among the inmates of the Erie County Penitentiary at Buffalo, and the superintendent recommends that no prisoners be received for thirty days, and that all discharged prisoners shall be quarantined for a suitable length of time. The disease has also broken out in the county almshouse.

—The Hospital Saturday and Sunday Association has finally accepted the resignation of the Presbyterian Hospital from the association; this action having been long delayed in order that every possible effort might be made which should tend to preserve united action in the coming general collection.

— The mayor and several other city officials have just paid a visit to the new farm for the insane at Central Islip, Long Island, and expressed themselves as much pleased with the condition of the enterprise. There are at present accommodations for three hundred patients, who are taken from the crowded asylums on Ward's and Blackwell's Islands, and are placed in little colonies on the farm; and the Commissioners of Charities and Correction have asked for an appropriation of $250,000 to continue the work during the coming year.

— The new Roman Catholic St. Joseph's Hospital, for incurable cases, which is situated north of the Harlem River, was consecrated in the presence of a large gathering by Archbishop Corrigan on the 11th of December. The building is a handsome structure of brick and terra-cotta, with beds to accommodate 250 patients, and is to be under the charge of the Sisters of the Poor of St. Francis.

— The estimate of the expenses of the Health Department for the coming year was $421,461, and the Board of Estimate and Apportionment has cut this down to $413,000. The appropriation for the year 1888 was $394,877. The Butchers' Association urged that the Health Department be enabled to employ six inspectors for the purpose of preventing traffic in tainted meat, and the Board provided for the appointment of four inspectors,— two more than are now employed.

— During the past week the State Board of Charities held a meeting in Albany, at which its annual report was prepared for transmission to the Legislature. The statistics in regard to the insane are of the most interest, and show that the whole number of insane in the institutions of the State on October 1, 1888, was 14,772, as against 14,062 this increase of 710 being the greatest in any year in the history of the State. All of the asylums are full, and many are greatly overcrowded.

— Maurice Norton Miller died December 9, in the fiftieth year of his age. He was born in Keene, N. H., and was graduated from the medical department of the University of the City of New York. He practised for sixteen years in Philadelphia, and then returned to New York, where he has since resided. He was one of the lecturers at the Loomis Laboratory, connected with the University Medical School, and was also pathologist to some of the institutions on Ward's and Blackwell's Islands.

Correspondence.

SUPERSTITION DIES HARD.

BOSTON, Dec. 24, 1888.

MR. EDITOR,—A young woman under my care at the Boston Dispensary complained of an itching of the skin, for which I ordered her a wash, to use several times a day. On taking the prescription she remarked that my treatment was very different from the one she had when suffering from a similar itching several years ago, in the north of Ireland.

The two modes of treatment on the former occasion were to walk naked through a hank of green yarn three times, held by two women, or to make a grave, lie down in it, and have three shovelfuls of clay thrown on her.

She refused the yarn treatment, because she was

unwilling to be naked before the two women. She did not object to the grave, and declared herself benefited by it.

Yours truly,

JOHN W. FARLOW.

VEHICLES FOR IODIDE OF POTASH.

DORCHESTER, Dec. 22, 1888.

MR. EDITOR, — In your issue of December 20, under the transactions of the Suffolk District Medical meeting October 10, I noticed the variety of vehicles suggested to be used in the administration of iodide of potash.

Several years ago I had a patient who was particularly susceptible to the effect of iodide of potash. Having exhausted a long list of vaunted vehicles to no purpose, I was about to give up in despair, when an old physician suggested to administer a solution of the drug in milk. A trial was made with most happy results. The patient, who could not tolerate ten grains at a dose, very soon could take forty grains in milk, with no symptoms of nausea. This may be an old and forgotten vehicle for the administration of iodide of potash, but to me it was new, and has ever proved unfailing.

A goblet of milk will almost completely cover the taste of iodide of potash, and apparently in no wise interfere with its medicinal properties. As I do not now remember to have seen this method suggested in any text-book, I give you my experience, hoping it may prove useful to others.

A. W. BLAIR, M. D.

REPORTED MORTALITY FOR THE WEEK ENDING DECEMBER 15, 1888.

Cities.	Estimated Population for 1888.	Reported Deaths in each.	Deaths under Five Years.	Percentage of Deaths from				
				Infectious Diseases.	Consumption.	Typhoid Fever.	Diph. & Croup.	Scarlet Fever.
New York	1,526,081	684	280	20.85	15.90	1.45	5.80	4.93
Philadelphia	1,016,758	331	128	14.40	12.60	3.00	7.50	2.70
Brooklyn	751,432	339	129	13.34	11.31	1.16	7.35	.58
Chicago	760,000	—	—	—	—	—	—	—
St. Louis	449,160	—	—	—	—	—	—	—
Baltimore	437,155	161	58	12.16	14.26	2.48	2.48	—
Boston	407,024	170	55	15.66	15.08	.58	12.76	—
Cincinnati	325,000	100	—	14.00	16.00	3.00	9.00	1.00
New Orleans	248,000	139	35	13.68	2.88	—	3.60	—
Buffalo	230,000	—	—	—	—	—	—	—
Washington	225,000	82	30	13.42	14.64	1.22	3.66	—
Pittsburg	210,000	—	—	—	—	—	—	—
Milwaukee	200,000	—	—	—	—	—	—	—
Providence	123,000	—	—	—	—	—	—	—
New Haven	80,000	—	—	—	—	—	—	—
Nashville	65,153	15	2	13.33	6.66	6.66	—	—
Charleston	60,145	—	—	—	—	—	—	—
Portland	40,000	8	2	12.50	12.50	12.50	—	—
Worcester	76,328	24	10	24.96	8.32	4.16	4.16	4.16
Lowell	69,530	—	—	—	—	—	—	—
Cambridge	64,079	22	9	4.55	27.30	—	4.55	—
Fall River	61,203	22	8	4.55	22.75	—	—	4.55
Lynn	51,467	15	—	13.33	20.00	—	13.33	—
Lawrence	40,175	20	5	10.00	—	20.00	—	—
Springfield	39,952	10	4	40.00	—	—	20.00	—
New Bedford	36,298	6	2	16.66	16.66	—	16.66	—
Somerville	33,307	—	—	—	—	—	—	—
Holyoke	32,887	—	—	—	—	—	—	—
Salem	28,781	10	3	—	10.00	—	—	—
Chelsea	27,552	8	—	12.50	37.50	12.50	—	—
Haverhill	24,979	5	1	—	—	—	—	—
Taunton	24,796	3	1	—	—	—	—	—
Brockton	24,784	4	1	—	25.00	—	—	—
Gloucester	23,187	—	—	—	—	—	—	—
Newton	21,105	3	—	—	—	—	—	—
Malden	18,932	—	—	—	—	—	—	—
Fitchburg	17,534	5	—	—	—	—	—	—
Waltham	16,651	3	1	—	—	—	—	—
Newburyport	13,839	3	1	—	—	—	—	—
Northampton	13,419	—	—	—	—	—	—	—

Deaths reported 2192: under five years of age 765; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas, and fevers) 348, acute lung diseases 338, consumption 263, diphtheria and croup 140, scarlet fever 49, typhoid fever 39, whooping-cough 37, diarrhœal diseases 31, measles 24, malarial fever 6, erysipelas 6, cerebro-spinal meningitis 5, puerperal fever one. From whooping-cough, New York 20, Brooklyn 8, Washington 3, Philadelphia and Baltimore two each, Boston and Worcester one. From diarrhœal diseases, New Orleans 10, New York 9, Philadelphia, Brooklyn and Springfield 3 each, Boston, Cincinnati, Washington and Worcester 1 each. From measles, New York 19, Brooklyn 5. From malarial fever, Baltimore 6, Brooklyn 4, New Orleans 3, Nashville 1. From cerebro-spinal meningitis, Washington 3, New York, Worcester, and Fall River 1 each. From puerperal fever, Boston 1.

In the 28 greater towns of England and Wales, with an estimated population of 9,398,273, for the week ending December 1, the death-rate was 17.8. Deaths reported 3210: infants under one year of age, 789; acute diseases of the respiratory organs (London) 258, measles 264, scarlet fever 59, diphtheria 53, whooping-cough 56, fever 47, diarrhœa 44, small-pox (Cardiff 2, Sheffield 1) 3.

The death-rates ranged from 13 2 in Hull to 27.9 in Cardiff; Birmingham 18.3, Leeds 20.8, Leicester 13.9, Liverpool 23.5, London 16.5, Manchester 21.2, Newcastle-on-Tyne 22.3, Nottingham 13.8, Sheffield 17.7, Sunderland 17.4.

In Edinburgh 16.3; Glasgow 19.8; Dublin 22.9.

The meteorological record for the week ending December 15, in Boston, was as follows, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Week end'g Saturday,	Barometer.	Thermometer.			Relative Humidity.			Direction of Wind.		Velocity of Wind.		State of Weather.*		Rainfall.	
Dec. 15, 1888.	Daily Mean.	Daily Mean.	Maximum.	Minimum.	8 A. M.	8 P. M.	Daily Mean.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	8 A. M.	8 P. M.	Duration. Hours& Min.	Amount in inches.
Dec. 9	30.02	36.0	39.0	34.0	92	86	89.0	E.	N.	11	12	R.	O.	19.30	.42
" 10	30.10	36.0	40.0	32.0	90	83	86.0	W.	W.	7	5	F.	O.	2.30	.02
" 11	29.56	40.0	42.0	35.0	88	92	90.0	E.	N.	16	36	R.	R.	12.40	.68
" 12	29.61	29.0	35.0	23.0	52	76	64.0	N. W.	W.	24	28	F.	C.	3.00	.04
" 13	29.84	30.0	27.0	16.0	36	53	44.0	W.	W.	19	12	O	C.		.00
" 14	29.94	12.0	16.0	6.0	61	45	53.0	W.	N. W.	23	24	C.	C.		.00
" 15	30.38	23.0	32.0	14.0	52	79	66.0	W.	S. W.	23	21	C.	E.		.00
Means for the Week	29.92		33.0	24.0			70.0								

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, UNITED STATES ARMY, FROM DECEMBER 15, 1888, to DECEMBER 21, 1888.

ALEXANDER, CHARLES T., lieutenant-colonel, surgeon, and Captain HENRY S. KILBOURNE, assistant surgeon, detached for duty on Army Retiring Board, to meet at Vancouver Barracks, W. T., at the call of the president thereof. Par. 22, S. O. 292, A. G. O., Washington, D. C., December, 15, 1888.

Leave of absence for one month, with permission to apply for an extension of three months, is granted Captain LOUIS A. LE GARDE, assistant surgeon. Par. 15, S. O. 290, A. G. O., Washington, December 13, 1888.

By direction of the Secretary of War, 1st Lieutenant NATHAN S. JARVIS, assistant surgeon, is relieved from duty at Fort Leavenworth, Kan., and will report to commanding officer at Fort Lewis, Col., for duty. Par. 14, S. O. 290, A. G. O., Washington, December 13, 1888.

HOPKINS, WILLIAM E., captain, assistant surgeon, is detached as member of the Army Retiring Board to meet at San Francisco, Cal., vice Major HENRY E. TILTON, surgeon, relieved. Par. 3, S. O. 294, A. G. O., Washington, December 18, 1888.

By direction of the Secretary of War, the leave of absence granted Captain WILLIAM F. CARTER, assistant surgeon, S. O. No. 116, November 12, 1888, Department of Texas, is extended five months. Par. 4, S. O. 292, A. G. O., Washington, December 15, 1888.

Leave of absence for one month is granted Captain GEORGE MCCREERY, assistant surgeon. Par. 4, S. O. 295, headquarters Division of Atlantic, Governor's Island, N. Y., December 15, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, FOR THE WEEK ENDING DECEMBER 15, 1888.

PENROSE, THOMAS N., surgeon, ordered for examination pre liminary to promotion.

OBERLY, A. S., medical inspector, ordered before the Retiring Board.

DICKSON, S. H., passed assistant surgeon, detached from the "Richmond" and to the "Pensacola."

ASHBRIDGE, RICHARD, passed assistant surgeon, detached from "St. Louis" and to the "Richmond."

AUZAL, ERNEST W., assistant surgeon, promoted to passed assistant surgeon.

WIEBEL, F. F., assistant surgeon, promoted to passed assistant surgeon.

SOCIETY NOTICES.

ANNUAL MEETING OF THE ASSOCIATION OF ACTING ASSISTANT SURGEONS OF THE U. S. ARMY. — The annual meeting of the Association of Acting Assistant Surgeons of the U. S. Army will be held in Newport, R. I., Monday, June 24, 1889, at 8 P. M. Members of the Association are cordially invited to read or present papers concerning the history and the welfare of the corps. Members who intend to be present are requested to notify the Recorder at the earliest possible date.

A. REEVES JACKSON, M. D., *President*,
271 Michigan Avenue, Chicago, Ill.
W. THORNTON PARKER, M. D., *Recorder A. A. A. S.*,
Newport, R. I.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY. — There will be a meeting of this Section at 19 Boylston Place on Wednesday evening, January 2, at 8 o'clock. Drs. H. A. Baker and G. F. Grant will (by invitation) present a communication on the "Treatment of Fissures of the Palate," and will show patients, apparatus, etc. The subject will also be considered from a surgical point of view. Drs. R. W. Lovett and Edward Reynolds will report the results of the treatment of post-nasal catarrh by the removal of nasal obstruction in 110 cases.

G. H. MONKS, M. D., *Secretary.*

DIED.

Died at Winchendon, Mass., December 19, 1888, Ira Russel, M.D., M.M.S.S., aged seventy-four years.

OBITUARY. G. H. LODGE, M. D.

Dr. G. H. Lodge, one of Boston's oldest physicians, died December 17th, at his home, 1423 Washington St. He was an uncle of Hon. H. C. Lodge, and leaves a wife and two sons, H. E. and Richard Lodge. Dr. Lodge was eighty-three years of age. He was a graduate of Harvard College in the class of 1825, and of the Harvard Medical School in 1828. In his collegiate course he was a classmate of the late Hon. Charles Francis Adams, Rev. S. K. Lothrop, and John Langdon Sibley.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Otological Society. Twenty-First Annual Meeting, Pequot House, New London, Conn., July 17, 1888. Vol. iv. Part 2. 1888.

Lectures to Practitioners on the Surgical Diseases of the Kidney amenable to Surgical Treatment. By David Newman, M. D., etc. etc. London: Longmans, Green & Co. 1888.

Lectures on Ectopic Pregnancy and Pelvic Hæmatocele. By Lawson Tait, F. R. C. S. etc., Birmingham. 1888.

Questions and Answers on the Essentials of Surgery: together with a Full Description of the Handkerchief and Roller Bandages. By Edward Martin, M. D. With ninety illustrations. Philadelphia: W. B. Saunders. 1888.

Questions and Answers on the Essentials of Obstetrics. Prepared especially for Students of Medicine. By William Easterly Ashton, M. D. With illustrations. Philadelphia: W. B. Saunders. 1888.

The Psychological Influence of Errors of Refraction and of their Correction. By George M. Gould, M. D., Philadelphia. September 29, 1888.

The Homing Instinct. An Explanation suggested. By George M. Gould, M. D. Reprint.

Double Chorio-retinitis, with Partial Degeneration of the Optic Nerve, associated with Curious Lymph Extravasation into the Retina and Vitreous. By Charles A. Oliver, M. D., Philadelphia, Pa. Reprint.

A New Style of Bi-focal Lenses. By George M. Gould, M. D., Philadelphia. November 3, 1888.

Is the Electric Light injurious to the Eyes. By George M. Gould, M. D., of Philadelphia. December 8, 1888.

Transactions of the Colorado State Medical Society. Eighteenth Annual Convention, Colorado Springs, June, 1888.

A Peculiar Case of Herpes Zoster Ophthalmicus, Serous Iritis, or "Ophthalmo-Neuritis." By George M. Gould, M. D. Reprint.

Report of Proceedings of the Conference of Local Health Officials, held by invitation of the State Board of Health of Missouri, at St. Louis, December 4th, 1888. Sanitary Deficiencies in State — Epidemics of Small-Pox — Proposed bill for creation of Local Boards — Financial Condition of various State Boards — Resolutions.

The History of the Filaria Sanguinis Hominis: its Discovery in the United Sates, and especially the Relationship of the Parasite to Chylocele of the Tunica Vaginalis Testis. By William M. Mastin, M. D., Mobile, Alabama, Fellow of the American Surgical Association, and Member of the American Association of Genito-Urinary Surgeons. Reprint.

Exploratory Trephining and Puncture of the Brain almost to the Lateral Ventricle, for Intracranial Pressure supposed to be due to an Abscess in the Temporo-sphenoidal Lobe. Temporary Improvement; Death on the Fifth Day; Autopsy: Meningitis with Effusion into the Ventricles. With a Description of a proposed Operation to Tap and Drain the Ventricles as a definite Surgical Procedure. By W. W. Keen, M. D., Professor of Surgery in the Woman's Medical College of Pennsylvania; Surgeon to St. Mary's, St. Agnes's, and the Woman's Hospitals, etc. December 1 1888.